DOCUMENT RESUME

ED 095 734 HE 005 807

TITLE	Programmatic Planning [Montana]. Technical Group Report No. 8.
INSTITUTION	Montana Commission on Post-Secondary Education, Helena.
PUB DATE	May 74
NOTE	169p.
EDRS PRICE	MF-$0.75 HC-$7.80 PLUS POSTAGE
DESCRIPTORS	Cooperative Programs; Curriculum Planning; Enrollment; Governance; Graduate Study; Graduate Surveys; *Higher Education; *Post Secondary Education; *Program Planning; *Statewide Planning
IDENTIFIERS	*Montana

ABSTRACT

This is one of a series of reports by technical consulting groups that are advisory to the Montana Commission on Post-Secondary Education. The primary purpose of these reports is to provide the commission with information relevant to its task of developing plans for the future of Montana postsecondary education. The technical group was required: (1) to inventory all programs, courses, and sections, their enrollments for the last 3 years, and the number of graduates of each program; (2) to summarize current institutional plans and priorities for addition, deletion, and expansion of programs; (3) to describe current procedures and criteria for program initiation, review, and termination; (4) to make recommendations for improvement of the planning process. Contained in this document is the response to the requirements concerning all institutions in Montana: colleges, universities, community colleges, and vocational-technical institutes. Each institution prepared a statement regarding the recommendations on the improvement of the planning process. Appendices include: graduate programs at Montana's higher education institutions; cooperative programs; governance responsibilities; and curriculum proposals. (Author/PG)

ED 095734

TECHNICAL GROUP REPORT NO. 8

PROGRAMMATIC PLANNING

U.S. DEPARTMENT OF HEALTH,
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Prepared for

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May, 1974

HE 005 807

This is one of a series of reports by technical consulting groups which are advisory to the Montana Commission on Post-Secondary Education. The data and recommendations presented in these reports reflect the work of the technical group and its members and not the views of the Commission itself.

The primary purpose of these reports is to provide the Commission with information relevant to its task of developing plans for the future of Montana post-secondary education. Each report will be reviewed by the members of the Commission and used in the Commission's deliberations.

The Commission is indebted to the many individuals from institutions of post-secondary education, state agencies and professional organizations who served on the technical consulting groups, and to the institutions and agencies which contributed the data and personal services which made it possible for the technical groups to carry out their charges.

All Members, Commission on Post-
Secondary Education
201 E. 6th Ave., Suite 5
Helena, Montana 59601

Dear Commissioner James:

Pursuant to the request of the Commission on Post-Secondary Education, through its Staff Director, Mr. Patrick M. Callan, the Technical Advisory Committee on Programmatic Planning is pleased to submit its final report in response to the Commission's charge.

It should be noted that the enclosed report of the Committee bears the unanimous approval of its members. It is based on information gathered by the members at their respective institutions, on indepth discussions of the Commission's charge, on extensive discussions at a good many meetings of sub-committees of the whole and several total-membership conferences, and on understandings and agreements reached at the Committee's final meeting on March 22.

This report of the Programmatic Planning Committee is respectfully submitted to the Commission with the hope that its factual and informational character will prove useful and instructive to the Commission and that its recommendations will help to form the basis of future planning and action by the Board of Regents and Montana Legislature.

Sincerely yours,

Richard G. Landini
Chairman

RGL/jl

TECHNICAL GROUP ON PROGRAMMATIC PLANNING

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TECHNICAL GROUP ON PROGRAMMATIC PLANNING

Charge

1. Inventory all programs,* courses and sections, their enrollments for the last three years, and the number of graduates of each program.

2. List all programs added or terminated during the last three years.

3. Summarize current institutional plans and priorities for addition, deletion, and expansion of programs.

4. Describe current procedures and criteria for program initiation, review and termination.

5. Make recommendations, or alternative recommendations, for improvement of the planning process.

*For purposes of this group, a program is a series or sequence of courses leading to a degree or certificate.

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TECHNICAL GROUP ON PROGRAMMATIC PLANNING

INTRODUCTION

Following discussions and analysis of the five-part general charge, the Committee was subdivided into six ad hoc committees. The chairman of each of these ad hoc committees was assigned specific responsibilities, as follows:

> Subcommittee I: Coordinate the data gathering and presentation format for the six units of the University System, under parts 1 and 2 of the charge.
>
> Subcommittee II: Coordinate the data gathering and presentation format for the three community colleges, under parts 1 and 2 of the charge.
>
> Subcommittee III: Coordinate the data gathering and presentation format for the five technical centers, under parts 1 and 2 of the charge.
>
> Subcommittee IV: Coordinate the data gathering for the six units of the University System, under parts 3 and 4 of the charge.
>
> Subcommittee V: Coordinate the data gathering for the three community colleges, under parts 3 and 4 of the charge.
>
> Subcommittee VI: Coordinate the data gathering for the five technical centers, under parts 3 and 4 of the charge.

The specific information gathered to meet the requirements of the charge cover a three-year period, academic years 1970-71 through 1972-73, and the fall quarter (or semester) 1973.

Each and every representative of the System's four-year colleges and universities, the community colleges, the technical centers and the private colleges was asked to prepare a statement on behalf of his institution, regarding part 5 of the charge--recommendations on the improvement of the planning process.

In December, an additional member representing the private colleges within the state was added to the Committee. Through his coordinating efforts, information about the three four-year private institutions was to be gathered to meet all five parts of the charge.

The several subcommittees met and exchanged information during the period between November 16 and March 22. On the latter date, according to the prescribed plan and deadline date, all representatives met in Helena to collect and distribute the data. Having reviewed the process and the result, the Committee of the whole delivered all data to Mr. Pat Callan, for presentation to the Commission.

Included in these data, together with specific information required under the five parts of the charge, are print-outs of course enrollments over a three-year period, 1970-73, gathered by those institutions at which the data was available. These print-outs were delivered to Mr. Pat Callan, Staff Director of the Commission and is on file in the Commission office.

INSTITUTIONAL PROFILES

1970-71 -- 1972-73

Individual responses to the first charge--"Inventory all programs, courses and sections, their enrollments for the last three years, and the number of graduates in each program"--constitutes the substance of the report and is arranged as follows:

1. Four-Year Institutions
    a) Eastern Montana College
    b) Montana College of Mineral Science and Technology
    c) Montana State University
    d) Northern Montana College
    e) University of Montana
    f) Western Montana College
    g) Private Colleges
2. Community Colleges
3. Vocational Technical Centers

These profiles can be found in the office of the Commission on Post-Secondary Education.

RESPONSE OF THE TECHNICAL COMMITTEE ON PROGRAMMATIC PLANNING TO THE COMMISSION ON POST-SECONDARY EDUCATION

Individual responses to the second, third, and fourth charge of the Commission comprise the data included in this section, arranged as follows:

1. **Four-Year Institutions**
    - **a) Eastern Montana College**
    - **b) Montana College of Mineral Science and Technology**
    - **c) Montana State University**
    - **d) Northern Montana College**
    - **e) University of Montana**
    - **f) Western Montana College**
    - **g) Private Colleges**
2. **Community Colleges**
3. **Vocational Technical Centers**

FOUR-YEAR INSTITUTIONS

TECHNICAL COMMITTEE ON PROGRAMMATIC PLANNING
Responses to Charges 2, 3, & 4

EASTERN MONTANA COLLEGE

CHARGE 2: List of Programs added or terminated, 1970-1973

A. Programs added

1. 1970-71

   Bachelor of Arts major in Art, German, Music

   Bachelor of Science in Education with major in German

2. 1971-72

   None

3. 1972-73

   Bachelor of Arts majors in Spanish, Speech-Drama

   Bachelor of Science in Education major in Spanish, Speech-Drama

   Bachelor of Science in Rehabilitation and Related Services

   Associate of Arts degree with concentrations in any area in which a Bachelor of Arts major is offered

   A new program in Native American Studies which possibly may lead to a liberal arts major in the future

B. Programs terminated

1. 1971-72

   Phasing out of all courses in Russian completed

CHARGE 3: Summarize current plans and priorities for addition, deletion, expansion of programs.

A. School of Education

1. An individualized learning resource center is being put into operation and should be well organized by 1975. It is concerned with competency based instruction: not really a new program.

2. Exploring possibilities of the M. S. in Education (secondary), building upon some of the present liberal arts majors.

3. Expanding the Early Childhood Education program to train more teachers for the expected increase in public school kindergartens.

4. Exploring possibilities of the Educational Specialist degree in the field of Special Education.

B. School of Liberal Arts

1. Development of interdisciplinary majors.

2. New liberal arts majors in areas where demand and capacity develop. Currently, sociology, social science, and French hold potential.

C. Exploring potential for cooperative measures with other units: For example, cooperative possibilities making EMC facilities available for the Nursing program at MSU.

TECHNICAL COMMITTEE ON PROGRAMMATIC PLANNING
Response to Charges 3, 4

MONTANA COLLEGE OF MINERAL SCIENCE AND TECHNOLOGY

CHARGE 3: Summarize current institutional plans and priorities for addition, deletion, and expansion of programs.

A. Programs added

1. At the present time Montana College of Mineral Science and Technology has a proposed curriculum in Occupational Health and Safety before the Board of Regents. No other new programs are under consideration at this time.

2. During the past three years no new programs have been added and no programs dropped or expanded in the basic curricula.

3. At the College a continuing review is conducted. Because of such studies, there has been developed an expanded program in continuing education and summer session. This expansion has been in response to increased demand from the local community. All work in adult education has been self-sustaining.

CHARGE 4: Describe current procedures and criteria for program initiation, review and termination.

A. Procedures

1. Procedures for program initiation, revision, or termination may be initiated by the Dean, by any department head, or any member of a departmental faculty.

2. The first study step is conducted within the department. The study summary is advanced to all faculty within the appropriate division for review and evaluation. In most cases, any major change

will be referred to the faculty of the other division for assessment of impact on its related curricula and programs. If the proposal is approved at this level, the matter is referred to the Dean's Committee for evaluation and assessment. The Dean's Committee may refer it back to the department, deny or accept the proposal, and then refer it to the faculty for action. In a full faculty meeting, a proposal may be adopted or denied.

TECHNICAL COMMITTEE ON PROGRAMMATIC PLANNING
Responses to Charges 2, 3, & 4

MONTANA STATE UNIVERSITY

CHARGE 2: List all programs added or terminated during the last three years.

A. Programs added since July 1, 1970:

1. B. A. in Theatre Arts
2. B. A. in Speech
3. M. S. in Physical Education
4. M. S. in Psychology
5. M. A. in Art
6. M. A. in History
7. B. S. in Computer Science
8. B. S. in Electrical and Electronic Engineering Technology

B. Programs terminated since July 1, 1970:

1. Master of Science in Applied Science
2. M. S. in Education
3. Ph.D in Education
4. Ph.D in Entomology is under an admissions moratorium pending a review and evaluation of the program

CHARGE 3: Summarize current institutional plans and priorities for additions, deletions, and expansion of program.

A. Existing programs which will need state funding in order to continue:

1. WAMI Medical Education Program - present support from HEW and private sources will terminate in June, 1975.

2. Family Nurse Practitioner Program - present Federal support will terminate in June, 1975.

B. Proposed program which will need separate state funding:

1. Veterinary Medicine program modeled after the WAMI medical education program. Program would be carried out in cooperation with schools of veterinary medicine in other states. Students would take first year of program at Montana State University, using some of the same courses as the WAMI students.

C. Other proposed programs (not necessarily in order of priority):

1. Fifth and Sixth-Year Certificates in Professional Education. These programs have been in existence for many years, but persons who complete them have not received any official recognition from the University.

2. Name change of M.S. and Ph.D in Agricultural Economics to M.S. and Ph.D in Applied Economics - The new name would more accurately reflect the content and direction of the program.

3. Master of Fine Arts - Proposal is presently before the Regents.

4. B. S. in Biology
M. S. in Biology - These degrees would be for teachers and persons with a general, or liberal arts, interest in the life sciences which is not served by the present professionally-oriented degrees in this area.

5. M. S. in Biochemistry
M. S. in Plant Pathology - Doctoral degrees are presently authorized in these two fields, but for personal and professional reasons many students wish a masters.

6. M. S. in Sociology - Strong student interest in this field. Many of the students working toward the old Master of Science in Applied Science were concentrating in sociology.

7. B. S. in Social Welfare or Bachelor of Social Work - Program presently carried as an option under the sociology degree.

8. B. S. in Social Justice - Program presently carried as an option under the sociology degree.

9. M. A. in English - Primarily for secondary school teachers.

10. M. A. in Mathematics Teaching - For secondary school teachers.

11. Master of Music Education - For elementary and secondary school teachers.

12. M. S. in Computer Science - Strong demand among students and employers.

13. M. S. in Recreation Resource Management - Would build on the Recreation Area Management Option presently available under the B. S. in Agricultural Production and the B. S. in Agricultural Science.

14. M. S. in International Management - An interdisciplinary degree which would demand conversational fluency in a foreign language, an understanding of the cultural milieu, and knowledge of advanced skills and special managerial methods required at the international level.

CHARGE 4: Describe current procedures and criteria for program initiation, review, and termination.

A. Program initiation

1. New programs and program changes are initiated at the department level, although there are usually extensive informal discussions with administrators and other faculty members. All proposals are then reviewed by the Academic Council Coordinating Committee, and in the case of graduate courses of programs, also by the Executive Board of the Graduate Faculty. The first place where formal action is taken is in the Academic Council, which is the central institutional legislative council on curriculum. It is concerned chiefly with the academic soundness of the proposals and their coordination and integration into the campus academic effort.

2. Proposals which pass the Academic Council are then referred to the Curriculum Committee. which studies the proposals, chiefly with respect to financial and administrative feasibility, relationship to the aims of the institution, and compatibility with the role of the University within the system. Proposals must then be approved by the academic faculty (and in the case of graduate proposals, also by the graduate faculty) before submission to the Regents.

B. Program review and termination

1. During the past two years, all academic programs have been reviewed by the Academic Council Coordinating Committee, and all graduate programs have been reviewed by the Executive Board of the Graduate Faculty. The program terminations listed in Charge 2 were a direct result of this review, and in addition this process has led to a revision of some programs and change in emphasis of others. It is expected that this process will continue.

2. The Academic Council Coordinating Committee based their review on the following guidelines:

   a) Need for program both service and professional

   b) Curriculum at each level in terms of educational value to student and the thrust that the inclusion of this program would give to the total University effort

   c) In addition, consideration was given to

      1) Number of students

      2) Staff consequences if an effective program were to be offered

      3) Cost consequences of space, capital, staff, and library

      4) Regional value of the program

3. A particular effort was also made to distinguish between the need for the program and the quality level of the program.

TECHNICAL COMMITTEE ON PROGRAMMATIC PLANNING
Responses to Charges 2, 3, & 4

NORTHERN MONTANA COLLEGE

CHARGE 2: List all programs added or terminated during the last three years.

A. Programs added

1. The Associate of Arts and the Associate of Science degrees, which all units of the University System were granted authority to offer in April 1970, have been added during the past three years. In addition, we have added under the Master of Science degree in Vocational-Technical Education, the option in Career Guidance. This derives from authority to grant a master's degree in vocational guidance which was approved by the State Board of Education, Ex-officio Regents in 1968.

B. Programs terminated

1. During the past three years, Spanish has been dropped as an offering in foreign language and the Chemical Technology program has been suspended. Intercollegiate football has also been dropped as a cost-saving measure.

CHARGE 3: Summarize institutional plans and priorities for addition, deletion, and expansion of programs.

A. Plans and priorities

1. Until the final report of the Commission on Post-Secondary Education, and subsequent clarification of institutional role and scope, program planning will be difficult at best. Our plans for the present consist mainly of improving current offerings. For example, Northern Montana College has, in close cooperation with the Office of Superintendent

of Public Instruction, a five year project to develop a performance based program of education. This project, which will have implications for most Northern Montana College programs, aims at finding better ways of conducting present curriculum, not at the addition of new curriculum.

2. We believe that the approved Northern Montana College role and scope statement adequately encompasses whatever program we might wish to develop in the forseeable future. The statement as applies to Northern Montana College reads in part as follows:

   a) "...responsibilities in the liberal arts through the baccalaureate level and teacher education through the master's level. Northern Montana College has had a traditional responsibility in vocational education and vocational teacher education which it will continue to develop."

   b) The one major program which we desire authority to add in the near future is that of a non-teaching option under the Bachelor of Science degree in Vocational-Technical Education.

   c) At the present time we see no need to expand our Bachelor of Arts program offerings.

CHARGE 4: Describe current procedures and criteria for program initiation, review, and termination.

A. Procedures

1. The Curriculum Committee, which consists of nine voting members, two faculty members and one student representing each of the three divisions of the college, is the official faculty committee to review all proposals for additions, deletions, or modifications of curricula. The three division deans and the Academic Vice-President meet regularly with the Curriculum Committee as non-voting members.

2. In addition to its charge to review all proposals for curricular change, the Curriculum Committee is also involved in evaluating all college courses and programs on a regular cyclical basis and for making suggestions and recommendations for development of new curriculum.

TECHNICAL COMMITTEE ON PROGRAMMATIC PLANNING
Responses to Charges 2, 3, & 4

UNIVERSITY OF MONTANA

CHARGES 2, 3, & 4:

A. During the last three years, the University of Montana has added the following new degree programs:

1. M. S. in Environmental Studies
2. M. A. in Interdisciplinary Studies
3. B. A. in Italian
4. B. A. in Classics
5. B. A. in Religious Studies

B. During this same period the University has not terminated any of its undergraduate or graduate degree programs.

C. All existing undergraduate and graduate degree programs are under constant review, however, by the University's Curriculum Committee and Graduate Council. New courses, substantive revisions of existing courses, and new degree programs are thoroughly examined by either the Committee or the Council or both, and are subject to the final study and approval of the University's Faculty Senate. During the past three years the Graduate Council has undertaken a careful study of all of the University's Ph.D. degree programs. Particular attention is being given to faculty strengths, physical resources and facilities, student enrollments, and program costs. Since the 1971-72 year, the Council recommended, and the Administration approved, self imposed limitations on student admissions to the graduate degree programs in Education, a moratorium on new admissions to the Ph.D. degree program in History (lifted in 1973), and the deactivation for an indefinite period of the Ph.D. degree program in Pharmacy. In addition, the Department of Sociology has requested an external review of its doctoral program by the American Sociological Association. Intensive self studies will continue throughout the 1973-74 year.

D. The undergraduate curriculum is under similar critical examination. At the present time ad hoc faculty-student groups are reviewing possible duplications in Ecology and environmentally-oriented courses as well as those in Statistics.

E. On a broader scale, the academic deans have been charged with the particular responsibility of implementing measures to avoid internal duplication. Already underway are efforts to consolidate into a single coordinating unit the many and varied community service and outreach programs offered by the University. A study of the possible reorganization of the biological sciences unit into a single administrative entity is underway; and under a two-year grant from the Hill Family Foundation, the University has undertaken a study aimed toward the consolidation of all allied health professions and services programs into one broad-range program.

F. Given the severely restrictive limitations on the operational budget of the University of Montana over the past few years, the administation and faculty have not proposed plans and priorities for the addition to or expansion of academic programs. Although the Board of Regents has already approved the implementation of two programs, the University has found it impossible to channel sufficient funds from existing resources to begin the bachelor's degree program in dental hygiene and has thus far decided against significant expansion into Associate of Arts-Science programs.

G. The University has given a high priority to the need for strengthening (faculty lines, supplies, capital, physical resources) the undergraduate curriculum and degree programs. In the current academic year, the faculty of the University has been reduced by a total of 12.0 FTE over the previous year, despite a stabilized enrollment. Unless and until it is possible for the University to restore those faculty lines and to ensure adequate funding for existing programs, we do not anticipate expansion of our undergraduate curriculum. The University does not presently have under consideration or review any new graduate degree programs.

H. At the University of Montana, all proposals for substantive additions to and changes in the curriculum--new courses through new degree programs--are initiated by a department, academic unit, or school. In all cases, the proposal has been reviewed and considered by a department curriculum committee; and in the College of Arts and Sciences, each proposal is reviewed and acted upon by a collegial committee (a new English course by the Humanities Curriculum Committee; a new chemistry course by the Physical Sciences Curriculum Committee, for example). Such reviews are undertaken prior to submission to the University-wide Curriculum and Academic Standards Review Committee, composed of faculty and students representing the major fields of the curriculum, and the academic vice-president. Changes, additions, deletions in the curriculum recommended by the CASRC are reviewed and acted upon by the forty-five member Faculty Senate. The Senate's recommendations are forwarded to the academic vice-president and president, for their review and action. The president may then either return the proposal to the Senate of present the recommendation, with his endorsement, to the Board of Regents.

I. A copy of "Procedures on Curriculum Proposals" presently in effect at the University of Montana can be found in Appendix A-3 on page 101.

J. Since the faculty and administration undertake an annual review of curriculum and program procedures, the University of Montana does not recommend changes in the on-campus process.

K. The off-campus planning process--that is, procedures regarding Board review of institutional proposals--will be enhanced by the recent development of a subcommittee of the Regents on curriculum development. It seems to me imperative that the Board, through its subcommittee, have complete and thorough understanding of the plans and intentions of each and all of the System units regarding program additions and expansion, in order to make reasoned judgments on the need, propriety, and rationale for such expansion.

TECHNICAL COMMITTEE ON PROGRAMMATIC PLANNING

Responses to Charges 2, 3, & 4

WESTERN MONTANA COLLEGE

CHARGE 2:

A. No programs were deleted within the last three years. The only new programs added to Western's curriculum were the associate degrees which were awarded to all units of the University System on April 13, 1970.

CHARGES 3 & 4:

A. Western Montana College offers preparation for and grant the academic degrees of Bachelor of Science in Elementary Education and in Secondary Education which qualify the holders for the corresponding Montana Standard Certificates. Western also offers advanced professional training leading to the Montana Professional Certificate and the Master's degree in Education. In addition Western offers one and two years of general college and pre-professional curricula for those preparing for fields other than teaching. In 1972 an Associate of Arts Degree and an Associate of Science Degree were authorized by the Board of Regents.

B. Liberal Arts degrees in English and History were approved by the Board of Education ex officio Regents of the Montana University System in April 1970. These degrees were implemented without the addition of any new faculty members since the teaching majors in History and English are essentially the same as the Liberal Arts majors in the two fields.

C. Budget limitations have made program analysis a continuing responsibility of Faculty, Faculty Senate and Administration with the Curriculum Committee playing the primary role. The Curriculum Committee is composed of a representative from each major department and is on constant duty, with full meetings called when necessary. Action of the Curriculum Committee must be approved by formal action of the Faculty. New programs and new course offerings are carefully scrutinized by the Committee and are judged according to several criteria. Western's primary function has been and (probably always will be) the training of teachers. Therefore each course in the catalog must be justified on the basis of its contribution to the teacher preparation program. All courses in the current catalog can be justified in the training of Montana Public School Teachers. "Dead Wood" courses were dropped from the 1973-75 catalog as a result of an extensive "soul searching" study conducted by the Curriculum Committee in consultation with the representatives of all departments during the academic year 1971-72. With but few exceptions all courses not offered during the two-year life of the catalog were dropped. All courses in the 1973-75 catalog have been offered during the past year or will have been offered during the 1973-75 period. (The only exception is in the Languages.) Revision was prompted by budget limitations but is in order during the preparation of each catalog.

D. During the last few years, the lessening demand for foreign languages resulted in less that ten enrollees in almost all foreign language classes. Therefore, the one fulltime foreign language instructor was released (Spring 1971) and a "moratorium" has been declared in the area of foreign languages.

E. English and History faculty members with minor degrees in foreign language have offered to teach beginning classes in foreign language (if warranted by future demand) in addition to their other duties

F. In order to best utilize faculty time, each department was instructed by the Curriculum Committee to offer 12-15 credits at each class level each year for Freshmen and Sophomores and to offer each year at least 12 to 15 credits of upper division work on an alternating two-year basis. This is in keeping with the policy of each student preparing himself in two teaching fields with concentrations of no more than 60 quarter credits.

Placing a limit on the number of credits required for a major prevents some departments from getting carried away to the disadvantage of the student, helps insure an adequate class enrollment and helps maintain a balance among the department offerings. Offering upper division classes on an alternate year basis also helps to ensure adequate class enrollment.

G. Class size is carefully scrutinized by both departments and Administration and every effort is made to schedule only those undergraduate courses with sufficient demand to ensure at least ten enrollees. This quarter 12 classes with less than ten enrollees were cancelled

H. The Faculty Senate has recently conducted a curriculum examination and has concluded that Western's role has been determined and that Faculty and Administration can best serve the institution by up-grading established programs. To this end the Senate has created a special committee to encourage and help the various departments to work towards better program presentation.

TECHNICAL COMMITTEE ON PROGRAMMATIC PLANNING
Responses to Charges 2, 3, & 4

CARROLL COLLEGE

CHARGE 2: Programs added or terminated during the last three years.

A. Programs terminated

1. Art - Major discontinued (A.A. added; AC offered).
2. Chemistry - Major discontinued (A.A. added; Minor offered)
3. German - Major discontinued
4. Spanish - Major discontinued

B. Programs added

1. Accounting - Associate Degree added (major offered)
2. Art - Associate degree added (major discontinued)
3. Chemistry - Associate degree added (major discontinued)
4. Communication Arts - Associate degree added (theatre or speech)
5. Criminal Justice - Associate degree added
6. Dental Hygiene - Major added (Baccalaureate degree)
7. Education - Associate degree added (para-professional educ.)
   - Minor added (Early childhood education)
   - Area of Concentration added (Special Education)
   - Minor added (School librarianship)
8. English - Associate degree added
9. Finance - Major added (Baccalaureate degree)

10. Integrated Humanities - Program initiated for invited superior students (8 or 9 hours in each of first four semesters)

11. Mathematics - Associate degree added (with mathematics and physics options)

12. Nursing - Major added (baccalaureate degree)

13. Physical Education - Area of Concentration added

14. Psychology - Area of Concentration added

15. Social Work - Major added (baccalaureate) and Associate degree in paraprofessional education

16. Cooperative Education - Program added (provides six-month full-time work experience -- available in five departments

17. Continuing Education - Offers Helena area adults day and evening enrollment in Carroll courses for credit at a reduced tuition

18. Advanced Placement - Permits superior secondary students to enroll for credit in one or more Carroll classes while completing their senior year

19. Senior Citizen Program - Permits persons 60 and over to enroll for day and evening classes on an audit basis for a flat fee of $10.00 per semester

C. NOTE: With the exception of Dental Hygiene, Nursing and Social Work (areas of high current priority), the program additions indicated above required no increase in staff or course offerings

CHARGE 3: Current plans and priorities for addition, deletion, and expansion of programs.

A. Carroll is currently attempting to increase its enrollment to 1200 FTE students within two or three years for more effective utilization of its academic programs, faculty and physical facilities. An increase of 4% FTE (7% head count) in Fall 1973 was achieved largely from out-of-state enrollments and part-time adults, and through new degree programs in dental hygiene and nursing.

B. If the recruiting effort is successful in increasing student enrollment to the desired level, no major cutbacks in existing programs are contemplated.

C. Expansion of continuing education offerings for the Helena community is planned in coordination with other adult and vo-tech offerings by the Helena Public School system. Expansion of the advanced placement for area high school students (enrolling for credit at Carroll during senior year) is anticipated.

D. Carroll is willing to cooperate with other institutions interested in serving needs of Helena teachers and others for graduate credit.

CHARGE 4: Current procedures and criteria for program initiation, review and termination.

A. Program changes normally begin at the departmental level, and are then reviewed by the Curriculum Committee. Recommendations of the committee are acted on by the Board of Educational Policy and Practice. Final decision regarding major program changes, including initiation and deletion, is made by the Board of Trustees.

TECHNICAL COMMITTEE ON PROGRAMMATIC PLANNING
Responses to Charges 2, 3, & 4

COLLEGE OF GREAT FALLS

CHARGE 2: "List all programs added or terminated during the last three years."

A. Programs added

1. Criminal Justice minor
2. Associate Degree in Personnel Counseling
3. Associate Degree in General Business
4. Associate Degree in Early childhood Supervision
5. Associate Degree in Recreational Leadership
6. Associate Degree in Accounting
7. Associate Degree in Finance
8. Associate Degree in Criminal Justice Studies
9. Associate Degree in Mathematics
10. Associate Degree in Radiologic Technology

B. Programs terminated

1. None

CHARGE 3: "Summarize current institutional plans and priorities for addition, deletion, and expansion of programs.

A. Plans for Additional Programs

1. A cooperative mursing program with St. Patrick's Hospital. The College of Great Falls will provide the freshman year of instruction for some

of the student nurses sent to the college by St. Patrick's Hospital, the diploma-granting institution. (Faculty consulted: Rev. F. McInnis, Prof. E. Peressini; others, Miss Phyllis McDonald, St. Patrick's Hospital)

2. The Associate of Science degree in Radiological Technology, in cooperation with the two local hospitals located in Great Falls. (Faculty consulted: Rev. F. McInnis, Prof. E. Peressini; others, Dr. Long, Dr. Dahl, Mr. Don Champion)

3. Proposed changes in Bachelor of Arts in History, Bachelor of Arts in Social Studies and Bachelor of Science in Social Studies. Rationale: while recognizing the validity of specific courses now within our group requirements, the Social Sciences Department has decided that there may be equally valuable alternatives. The proposed changes add flexibility and allow for individual choices in consultation with the advisor. All recommended changes correspond to present core and group requirements of the College, and require no additional faculty or curriculum to implement.

4. Proposed Bachelor of Science Option in History. Rationale: The Social Sciences Department has evidence there is the need and desire on the part of many students to take a Bachelor of Science Option in History. A Bachelor of Science can be offered within the present curriculum structure. It is further believed that the implementation of B.S. option will increase enrollment.

5. Proposed Bachelor of Arts in History and Government and Bachelor of Science option in History Government. Rationale: These major-in-depth programs fulfill the needs of students with an academic interest in political science, as well as those planning legal or governmental careers. Similar programs are offered at various institutions of higher learning and would necessitate no staff or curriculum changes at the College of Great Falls. (Faculty consulted: Dr. E. Furdell, Dr. W. Furdell, Prof. Roger Snow)

(Proposals #3, #4, and #5 above are now on the calendar of the Academic Policy Committee for study and review in preparation of a recommendation to the faculty)

B. Plans for deletion of programs

1. None

C. Plans for expansion of programs

1. Proposal for expansion of the Psychology Program. The College at present offers a minor in Psychology. It is proposed that the College offer a curriculum leading to a B.A. and/or a B.S. in Psychology. (Faculty consulted: Prof. A. Ginalias, Prof. L. Olsen)

2. Proposal for the expansion of the use of the CLEP program. At present the use of the CLEP program is limited to the students in the military and in particular to students in the Malmstrom Air Force Program. Further CLEP credits on the record of transfer students from other colleges are accepted. (Faculty consulted: Mr. Gretch; CLEP committee members)

(Proposals #1 and #2 are not on the calendar of the Academic Policy Committee for study, review and action in preparation for a recommendation to the faculty)

CHARGE 4: "Describe current procedures and criteria for program initiation, review and termination."

A. The procedures and criteria in response to this charge may best be presented as described in Article III: Duties and Procedures of the By-Laws of the Academic Policy Committee, which appear as follows:

ARTICLE III: DUTIES AND PROCEDURES

The committee is, as stated in the purpose, primarily responsible for forming and implementing policies and procedures governing course additions and deletions, various course changes and other matters pertinent to the academic curriculum. It shall serve as a clearing house for curricular implementations by the various departments and the continuing education division. It shall examine, through the appropriate departmental chairman or official, the nature of the course changes suggested and their general harmony with the stated academic policy of the College of Great Falls.

Regarding curriculum changes, it shall operate in accordance with Procedure for Academic Curriculum Changes, adopted November 20, 1973, which is as follows:

1. All academic revisions MUST be submitted to the Faculty Academic Policy Committee (FAPC) during the first semester of each school year. The only exception shall be minor course changes - such as number, name or description - which can be accomplished by department approval and with agreement of the Academic Vice-President.

2. The proposal must be presented by the Academic Vice-President or by a Department Chairman, in which case the proposal must have been discussed and voted upon by the Department, or by the "floating student member" in accordance with the procedure outlined below.

3. The proposal, submitted in typed form to FAPC; must include:

a) the complete revision as it would appear in the catalog
b) the rationale for the revision
c) a prediction of academic and professional impact on the total institution
d) a prediction of the economic impact on the institution's budget

4. The FAPC shall consider the proposal and shall take either of two alternatives:

a) reject it completely, or
b) agree to pass the matter on to all departments for their consideration

5. If FAPC takes step 4.b., it shall be the responsibility of each department chairman to see that all department members receive typed copies of the proposal and that it be fully discussed, modified if necessary, and voted on at the department meeting.

6. A proposal so submitted during the first semester will be reconsidered at the February FAPC meeting. The committee will then approve or disapprove the (possibly modified) proposal.

7. Approved proposals are then re-typed with all corrections and additions, and copies are submitted to all faculty by March 1 for vote during the March faculty meeting.

8. All changes become effective with the beginning of the next fall term and will be published as a supplement to the two-year catalog in the years when no catalog appears.

B. All actions are sent to the President for review and consideration of approval. Ultimately, the actions are submitted to the Board of Trustees by the President for approval.

TECHNICAL COMMITTEE ON PROGRAMMATIC PLANNING
Responses to Charges 3 & 4

ROCKY MOUNTAIN COLLEGE

CHARGE 3:

A. Rocky Mountain College at this time has no specific plans for additions or deletions to its program. Talks are currently underway regarding the possibility of providing more extensive instruction on the Northern Cheyenne reservation in cooperation with the Busby School Board. This might develop into a satellite college program. This would, to a large degree, continue under a more formal arrangement what we are now doing under the Head Start Supplementary Training Program.

CHARGE 4:

A. The typical procedure for the addition or elimination of a program at Rocky is to begin with the department and division concerned, carry recommendations through the Academic Curriculum Committee (composed of at least one member from all six divisions of the school, and then to the Faculty at large. If the program makes it this far it must then receive formal approval from the Board of Trustees.

COMMUNITY COLLEGES

TECHNICAL COMMITTEE ON PROGRAMMATIC PLANNING
Responses to Charges 2, 3, & 4

DAWSON COLLEGE

CHARGE 2: List all programs added or terminated during the last three years.

A. Programs added

1. Agri-business (transfer of terminal)
2. Human Services (transfer or terminal)
    - a) Also, an optional 1-year certificate program
3. Law Enforcement Option: (transfer)
    - a) Corrections Option
4. Livestock Technology (1-year terminal - not transferable)
5. Pre-medical Technology (transfer)
6. Secretarial Science Options: (transfer or terminal)
    - a) Legal Stenographer (2 year)
    - b) Medical Stenographer (2 year)
    - c) Veterinary Office Assistant (2 year)
    - d) Clerk typist (1 year)

B. Programs Deleted

1. Petroleum Technology

CHARGE 3: Summarize current institutional plans and priorities for addition, deletion, and expansion of programs.

A. Addition

1. Indian Studies Program
2. Law Enforcement Options
    - a) Retail and Industrial Security
    - b) Fire Science

A. Addition

3. Continuing Education programs for Senior Citizens

4. Continuing Education programs for women

5. Fulfill Manpower Needs as they arise

B. Deletion

1. Pre-medical Technology

C. Expansion

1. No present plans to expand programs except in Law Enforcement; however, plans are made to research Human Services. It is hoped that the College may upgrade and change numerous courses within the present programs to remain abreast of societal changes and demands. The Continuing Education and Community Services areas will be expanded considerably, particularly in the areas of training women and senior citizens. Career education areas are presently being researched.

CHARGE 4: Describe current procedures and criteria for program initiation, review and termination.

A. Initiation

1. The area to be served is thoroughly researched to determine manpower needs of the prospective program.

2. The financing and articulation is thoroughly researched to eliminate duplication;

3. An Advisory Committee is established for community input;

4. The budget and curriculum is planned according to the results of 1-3;

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TECHNICAL COMMITTEE ON PROGRAMMATIC PLANNING
Responses to Charges 3 & 4

FLATHEAD VALLEY COMMUNITY COLLEGE

CHARGE 3:

A. Long-range plans

1. Flathead Valley Community College long-range plans include the addition of the following vocational-technical programs at appropriate times and when funding permits:

    a) Dinner cook

    b) Waitress

    c) Timber-faller

    d) Log-truck driver

    e) Law Enforcement

    f) Licensed Practical Nurse

    g) Nursing aide

    h) Soil-conversation Technician

    i) Recreational Technician

    j) Auto Mechanic

    k) Environmental Technician

2. Present plans call for deletion of the second-year secretarial program at the end of the 1973-74 academic year. All present programs will be expanded or curtailed on a year-to-year basis dependent upon employment trends, enrollment in programs, and changes in technology.

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CHARGE 4:

A. Current procedures and criteria for program initiation, review, and termination.

1. All ongoing programs are reviewed annually by appropriate staff and committees. The principle involvement in the program planning process is by the Instructional Council, a five-member group composed of the four Division Chairmen, elected by their respective faculties, and the Dean of Instruction. The process of program initiation or termination typically involves not only administration and faculty of the college, but also the community and the students.

2. The college-transfer program is modified annually by the addition or deletion of individual courses or sequences of courses. Such changes may be suggested by any member of the staff, student body, or the community. The suggestion is referred to appropriate division and is ultimately brought to the Instructional Council for adoption. Before approval for such a change is given, every effort is made to insure the transferability of each course by consultation with units of the university system to which students taking the course might transfer upon graduation.

3. Vocational-technical programs are initiated in essentially the same way as are changes in the transfer program excpet for the degree of participation of various elements. These programs have their conception as a result of a combination of community need, faculty commitment, and student interest. Planning for such programs is a cooperative effort of faculty and administration with major input by lay advisory councils and governmental agencies, most notable of these being the Employment Security Division. Final institutional approval is by the Instructional Council with possible veto by the President or the Board of Trustees. Final approval of a continuing vocational or technical program is obtained from the Board of Regents.

4. The community service program at Flathead Valley Community College is comprised of courses designed to meet the needs of adults in the community for upgrading of skills, development of recreational and leisure time activities, and general education. Because this program must be responsive and flexible, planning and implementation of course offerings is the responsibility of the dean of instruction with the advice of the instructional council. Such courses are typically non-college transfer and costs are offset by enrollment fees. The college endeavors to schedule a class on any subject for which a minimum audience exists and for which a qualified instructor can be obtained.

5. Short-term programs which address specific occupational needs in the community and which are funded by State or Federal funds are initiated in much the same fashion as community service. The majority of these are carried out under funding by the Manpower Development and Training Act with direct participation and supervision of the Montana Employment Service. The College, as the contracting training agency, participates in planning, implementation and management of the program upon demand. The President, Dean of Instruction, Dean of Students, and Manager of Services carry out these programs in this category include Secretarial Upgrading (20 weeks), Dinner Cook School (20 weeks) Timber-Faller Training (5 weeks), and Licensed Practical Nurse Program (48 weeks).

TECHNICAL COMMITTEE ON PROGRAMMATIC PLANNING
Responses to Charges 3 & 4

MILES COMMUNITY COLLEGE

CHARGE 3: Summarize current institutional plans for addition, deletion, and expansion of programs.

A. Addition of Programs

1. Investigation is presently underway to develop an Agricultural Technology program suited to the Farmer-Rancher needs of Southeastern Montana. Details as yet undetermined. Would involve co-operative effort with U. S. Agricultural Experiment State at Ft. Keogh.

2. Radio-TV Broadcasting program has been in hopper for some time. Directed to manpower needs in small stations requiring personnel trained in a combination of Broadcasting and Technical skills. Board of Regents has on "Hold" pending results of Post-Secondary Study.

3. Medical Records Librarian is a natural outgrowth of existing programs in Nursing and Secretarial Science (Medical Secretary). Need only to add two or three courses. Requires national agency approval to establish.

B. Deletion of Programs

1. No current plans for deletion of existing programs.

C. Expansion of Programs

1. Current Nursing Program (ADN-Registered) to be expanded to train Nurse's Aides. A demand also exists for training in Home Health Care. Could begin immediately upon approval; conducted during summers by existing staff when ADN students are at Warm Springs for Psychiatric Nursing.

CHARGE 4: Describe current procedures and criteria for program initiation, review, and termination.

A. The Academic Standards and Curriculum Committee - comprising departmental chairmen, Dean of Instruction, and Registrar (the latter two are currently the same person, but will be divided before the end of this year) - devote one of their several meetings each quarter to curricular review and evaluation, which would, if appropriate, lead to program initiation and/or termination.

B. Suggestions for program initiation can come from any source; faculty, administration, individuals and groups within the community, etc.

C. Program initiation, after an initial decision by the Academic Standards and Curriculum Committee that such should be considered, involves the following processes:

   1. A research of existing programs in other post-secondary institutions - to avoid unnecessary duplication, either in program or geography.

   2. An investigation of the manpower needs related to such a program - to assure that there is an employment market for those completing the program.

   3. A survey of the larger community served by the college to determine if the need for the program is recognized and that there will be sufficient long-range enrollment to warrant establishment of the program.

   4. If program appears "go" to this point - establish an advisory council of community members to make recommendations for curriculum organization and content.

   5. Final consideration and approval by Academic Standards and Curriculum Committee - recommendation to college president, administrative committee, and Board of Trustees.

6. Request for approval by Regents.

7. A mill levy vote of district taxpayers. Required because state funding support is based on previous year enrollment - not on anticipated enrollment which would take new program into account. Without voter approval of levy to finance programs there will not be sufficient funds in the budget to implement programs. This mill levy stumbling block can - and does - undo a lot of good work and planning. It it unfortunate that Regents approval of a program does not - for community colleges - provide adequate state funding for implementing the program.

D. Program termination normally occurs upon recommendation of the Academic Standards and Curriculum Committee - that having met the need, filled existing manpower positions, reduction or elimination of the need, failure of the program to meet the need, etc. - enrollment has dropped below the level required to maintain the program. Administrative fiat could also result in program termination based solely on budget restrictions, though consultation would occur with Curriculum Committee to determine which programs will be cut back or terminated. (Note: our only instance of program termination - Drafting, 1970 - was a totally cooperative decision.)

VOCATIONAL-TECHNICAL CENTERS

TECHNICAL COMMITTEE ON PROGRAMMATIC PLANNING
Responses to Charges 2 & 3

BILLINGS VO-TECH

CHARGE 2:

A. 1970-71 is the first year Auto Body and Fender Repair was offered.

B. Auto Mechanics II, Drafting II and Food Preparation and Services II were added the 1971-72 school year.

C. An eight week Nurse's Aide program was added for the 1972-73 school year.

D. Farm Implement Mechanics was added for the 1973-74 school year.

CHARGE 3:

A. The current philosophy of the Billings Vo-Tech Center concerning additional courses is to make every effort to accommodate the needs for any occupational training where a need can be shown to exist and jobs are available in the Billings area or the state. Whether it is an eight-week, short, course like ward clerk or a long-term permanent course such as farm equipment mechanics the Center will try to provide adequate training for the student and the prospective employer. This philosophy will not be subject to change.

B. Current plans for:

1. Additions - The Center is going to hire a person to run a needs analysis for us on several program requests. Should a need for any of these be positive, we will ask for these programs. The priorities of any additions will be determined by the results of the needs analysis.

2. Deletions - At the present time the Center has no plans for deletions of any programs. However, we are considering cutting back on the number of trainees in a couple of programs to prevent over-saturation of the labor market.

3. Expansion of programs - At the present time the Center is planning to expand all of our courses (budget permitting) to eleven and twelve month courses. This is being done through individualized instruction and the open/entry - open/exit concept of enrollment. This will enable us to train more students and provide more flexibility in serving the occupational needs of our Montana citizens and people from the adjoining states.

TECHNICAL COMMITTEE ON PROGRAMMATIC PLANNING
Responses to Charges 2, 3, & 4

BUTTE VO-TECH

CHARGE 2:

A. Programs added during the last three years are:

   1. Off-Highway Vehicle

   2. Legal Secretary

   3. Medical Secretary

   4. Key Punch Operator

B. Programs terminated during the last three years are:

   1. Actually we have not terminated any programs. We have had some short term programs and some specially funded programs like MDTA, Nurses Aides and Waitress programs and three one-year 309 (b) programs.

CHARGE 3:

A. Current institutional plans for expansion of programs are in Mining Related areas of instruction such as the program which we plan to put into operation in January, 1974. This will be a joint venture with the Bureau of Safety and Health and the Workmen's Compensation Division of the Department of Labor and Industry.

CHARGE 4:

A. Presently if there is a need for any skilled or semi-skilled workers in any area, we consult our advisory committees and establish program initiation. The programs are continually reviewed and progress is reported and discussed at regularly held meetings with the advisory committees.

TECHNICAL COMMITTEE ON PROGRAMMATIC PLANNING
Responses to Charges 2, 3, & 4

GREAT FALLS VO-TECH

CHARGE 2:

A. Programs added

  1. Public Service Occupations - Firefighters

B. Programs terminated

  1. Electronics

CHARGE 3:

A. At meetings with the directors of the five Vo-Tech Centers, superintendents of the local districts and the Office of the State Superintendent of Public Instruction, it was agreed that the initial occupational cluster of the Great Falls Vocational-Technical Center would be:

  1) Automotive Center (major emphasis)

  2) Health Occupations Cluster (major emphasis)

  3) Public Service Occupations (i.e., firefighters, environment)

  4) Business and Office Occupations

  5) Welding

B. Further additional course designation would be made for the Great Falls Vo-Tech Center following a thorough occupational and job needs study.

CHARGE 4:

A. Current procedures for program initiation and termination are:

1. Presently the local Vo-Tech Center, through research and advisory committees, has initiated the need for a program. The program then is submitted to the Office of the State Superintendent of Public Instruction for approval with a budget request to initiate the program. If approval was given to start the program and it proved successful, the new program was included in the Center's next year's budgets that were sent to the State Board of Education for budgetary approval.

2. Termination of a program is done much the same as the initiation. It usually starts locally with the Center and through research it can be determined if there is a need for the program. A request is then forwarded to the Office of the State Superintendent of Public Instruction for termination of the program. It may also start as an agreement among the five centers that one center should terminate a program in favor of another center, thus helping to avoid unnecessary duplication.

TECHNICAL COMMITTEE ON PROGRAMMATIC PLANNING
Responses to Charges 2, 3, & 4

HELENA VO-TECH

CHARGE 2: List all programs added or terminated during the last three years.

A. No program has been added or terminated during the past three years. We have, however, had a great number of internal changes which hace influenced the overall course of study. We are constantly adding or deleting those related experiences which lead toward a more rounded and more completely competent employee. Examples of these changes are adding welding where appropriate, related math, as needed, business law and human relations to those people who will be needing these skills, consumer ed and a new course of motorcycle repair which isn't a separate program, but a related course of study. There are other changes which are made as needed.

CHARGE 3: Summarize current institutional plans and priorities for addition, deletion and expansion of programs.

A. We plan to expand several programs and add programs as current surveys and public reqqests point up the need for such expansion or addition. It is anticipated, with the construction of a new facility; already planned and in progress, we will expand the Agri-Mechanics course to include Over-the road truck and Coach Diesel, and industrial diesel mechanics. Some expansion of the Auto-Mechanics program will also result from these moves. We have planned and received approval to offer Business Machine Repair and Graphic Arts. Additions or deletions of programs are based upon student enrollment, placement and public demand. So far, we don't anticipate too great a change in existing programs, other than those we have listed here. The rate of expansion is determined by the State Legislature and the Office of the Superintendent of Public Instruction budgeting policies.

CHARGE 4: Describe current procedures and criteria for program initiation, review and termination.

A. The Helena Vo-Tech Center utilizes several methods for setting criteria for program initiation, review and termination. Surveys are sent out frequently to determine the demand for certain skills. The survey results are then checked against current market and manpower availability statistics. Further checking is accomplished through our Lay Advisory Committee. In order for our center to be current in regard to curriculum design, we are frequently in contact with members of labor and industry as well as the community at large. The process for curriculum change is rapid in vocational education, therefore, the process for implementing change is also very rapid. When change becomes apparent we review the change with our Lay Advisory Committee, our faculty committee and the school administration. When the change is initiated the process has an added dimension of having the Vocational Education Division of the Office of the State Superintendent of Public Instruction alerted to the change and then we go ahead with the planned change. We feel that too much delay in effecting change would be detrimental to the process of bringing up-to-date instruction to the student. Some processes are internal and much of the process of initiation review and termination is carried on an "in house" basis.

TECHNICAL COMMITTEE ON PROGRAMMATIC PLANNING
Responses to Charges 2, 3, & 4

MISSOULA VO-TECH

CHARGE 2:

A. Missoula Technical Center has enjoyed continuing success with all programs initiated since its beginning. Programs are organized in a very flexible manner, permitting necessary changes to insure program success. The school short existence, coupled with flexibility in meeting changing needs, has eliminated the need to terminate any programs.

B. Outlined below are the program and/or option changes for Fund 21 programs. Special programs and Adult and Continuing Education changes are not noted, as both divisions are very dynamic and realize change on a regular basis, meeting immediate and ever-changing needs. These changes are too numerous and frequent to list, but can be observed in the inventory portions of this report.

1. Business Occupations

Legal Secretary. The Legal Secretary option of Business Occupations program was initiated fall quarter, 1973. A definite need for this type of option had been expressed by an ad hoc advisory committee, legal secretary association, Montana Bar Association, University of Montana Law School, and individuals in the legal professions.

Legal Stenographer. The Legal Stenographer option of the Business Occupations program represents the stratified legal clerical aspects of the program. This stratified approach to an occupational program is termed a cluster ladder, lattice approach and was explained previously in this report.

Medical Clerk. The Medical Clerk option of the Business Occupations program was introduced fall quarter, 1972. This option is a result of stratifying the medical clerical aspects of this program. The rationale for its development is explained by the cluster ladder, lattice approach to occupational programs.

Medical Receptionist. The Medical Receptionist option of the Business Occupations program was initiated and developed along with the Medical Clerk option.

Distributive Occupations

The Distributive Occupations program formerly had two options; Retail Sales and Mid-Management. This program, as a result of advisory committee suggestions, State Department direction, and appropriate business and industry needs now has twelve options. These options are listed in the program inventory and follow the same cluster ladder, lattice approach to occupational programs.

Educational Aide

Formerly the Educational Aide program titled Instructional Aide. It was not a Fund 21 program at that time, but a special program funded totally by federal monies. Fall quarter, 1973 was the first time Missoula Technical Center initiated it as a Fund 21 program. At that time it was stratified to include the options shown on the inventory portion of this report, keeping with the cluster ladder, lattice approach to occupational programs.

Health Occupations

Practical Nursing was the only option available in the Health Occupations program until fall quarter, 1972. At this time the program was stratified, keeping with the cluster ladder, lattice approach. The options added in 1972 are listed in the program inventory.

CHARGE 3:

A. Missoula Technical Center feels that following two-year technical programs and/or options do qualify for an Associate of Applied Science degrees.

1) Aviation
2) Date Processing
    Programmer
3) Distributive Occupations
    Retail Management
    Wholesale Management
4) Electromechanical
    Industrial Electronics
    Industrial Electronic Communication
5) Forestry
    Forestry Technology

B. Missoula Technical Center, with limited program expansion, the following programs and/or options should qualify and award Associate of Applied Science degrees.

1) Business and Office
    Accounting
    General Secretary
    Legal Secretary
    Medical Secretary
2) Health Occupations
    Nursing

C. Missoula Technical Center, based on need, would like to offer programs in the following areas:

1) Heavy Equipment
    Batch Plant and Crusher Operation
2) Auto Mechanics
    Foreign Car Repair
3) Civil Engineering Technology
4) Building Environmental Technician

D. All program additions or expansion would follow the present cluster ladder, lattice approach to occupation programs. Limited emphasis would be placed on development of programs and/or options in the upper strata of this approach, with the majority of the emphasis placed on the lower strata programs and/or options.

CHARGE 4:

A. All programs at Missoula Technical Center are subject to the initial approval of the Superintendent and the Board of Trustees of the Missoula County High School District of which the post-secondary center is a unit.

B. Appropriate personnel from the local administration and instructional staff, the Department of Public Instruction, Division of Vocational Education are involved in all planning and evaluation stages. Approval of the State Board of Public Education is mandatory prior to implementation of a proposed program.

C. Development of post-secondary occupational training programs offered at MTC follows a standard procedure including but not limited to the following:

1) Identification of specific need for trainees and/or training.
2) Establishment and use of an advisory committee equally representative of labor and management within the occupational field, and including lay members representing the community and related areas of interest. All meetings are formally structured and minutes are kept.
3) Documentation of need for the training program including (a) scope or occupational cluster, (b) identification of special-need populations, (c) surveys of job opportunities, (d) identification of potential enrollees and their general needs, (e) analysis of the occupational cluster to determine its potential demands, (f) analysis of existing curricula, and (h) evaluation of facilities, costs and other factors affecting the offering of the program.
4) Analysis of tasks, knowledges and understanding necessary for successful job performance and translation of these into areas of instruction.
5) Analysis of performance levels adequate for success in the occupation, with these levels measured in proficiencies.
6) Identification of equipment, instructional materials and facilities necessary for training to meet job performance levels.

7) Establishment of criteria for selection of instructor, and identification of candidates to assure successful instruction.
8) Establishment of suggested criteria for selection of students to assure their needs are met in a likelihood of success in the occupation.
9) Development of syllabus based upon need identification, subject identification, facilities and methods used for instruction, sequential relationships of task skill, knowledges and understandings; common background of enrollees, criteria for approval from all agencies concerned; seasonal employment; and other pertinent considerations.
10) Preparation of proposal for the local and state boards, including the above information and a categorical budget.
11) Development of Courses of Study* based on occupational analysis and enrollee needs. All courses of study include (a) job performance levels (b) tasks performed on the job, (c) measurements of performance levels (behavioral objectives) (d) instructional materials and methods, (e) contact hours per unit, and (f) instructional sequence.
12) Quarterly and annual evaluation/revision of each course of study and entire syllabus.**
13) Documentation of curriculum.
14) Requests for approval from all state, federal, and independent agencies concerned with, or of significance to, successful employment of the trainee.

D. The lay advisory council should be made up of persons for labor and management. The latter should include persons who function on the mid-management level.

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*Courses of study are developed cooperatively by the instructor(s), the administration including counseling and curriculum staff, advisory committee members and others. In-service training in course of study development is required of all staff members.

**Involving MTC staff and advisory committee members.

E. This group is concerned with satisfactorily answering the following questions:

1) To what extent does the occupational field offer employment opportunities to those who may be trained?
2) To what extent is the occupation sufficiently stable to warrant an expenditure of public funds for a training program?
3) What will be the effect of scientific research and invention on this field of employment?
4) Will a training program in this field be unreasonably expensive for the taxpayers to support because of technological changes or early obsolescence of physical facilities?
5) To what extent does the nature of organization within the occupation assure cooperation of the industry with the school program?
6) To what extent will community wealth or welfare be increased through the proposed program?
7) Will the training benefits of the proposed program be general in nature and serve a large area of the economy?
8) Are there any legal conditions which might make the operation of the program difficult?
9) Would the proposed training program duplicate existing programs offered by other schools or agencies?
10) What will be the cost of the program?
11) Will any financial assistance be available from outside the local school district?
12) Is it possible to recruit an effective instructor or instructors for such a program?
13) Can the proper physical facilities be provided?
14) What is the priority of this program?

F. When affirmative answers are received for a proposed training program, the next stage of curriculum development can be undertaken.

FOUR-YEAR INSTITUTIONS

TECHNICAL COMMITTEE ON PROGRAMMATIC PLANNING

Responses to Charge 5
by
Units of the University System

Response to Charge 5 to the Technical Group on Programmatic Planning of the Montana Commission on Post-Secondary Education:

> Make recommendations, or alternative recommendations, for improvement of the planning process.

The academic vice-presidents of the units of the Montana University System wish to make the following recommendations in response to this charge:

1. Chief academic officers of all of the four-year institutions (public and private) and community colleges in Montana should meet on a regular basis to exchange information and investigate problems of mutual interest. Some of these meetings might profitably be focused on a single area, such as health care, or engineering, or business.

2. At the conclusion of the autumn quarter or semester each year, each of these institutions should prepare a report following the common format developed by the academic vice-presidents of the University System. This report should give the number of degrees and certificates granted by program and level for at least the past five years, and the current enrollment in each program at the lower division, upper division, masters, and doctoral level.

3. Explicit provisions should be developed for cooperative monitoring of future program development at each of these units, including:

- --the composition of explicit principles to ensure compatibility of a unit's existing and proposed academic programs with its approved mission:
- --ample clarification of the areas of concentration and specialization to be financed and emphasized at each unit; and
- --careful definition of the criteria which the Regents employ to determine unwarranted program duplication among the units of the Montana University System and community colleges, including
  - --the compatibility of a unit's stated mission and its academic programs;
  - --education and societal needs within the State;
  - --cost of instruction, direct and indirect, for all new or expanded programs;
  - --student demand, as revealed by credit-hour production, degrees awarded, and enrollment projection; and
  - --inventory of available resources, facilities, and faculty strengths to ensure initial and continuing quality and academic integrity.

4. Program budgeting techniques should be developed which will allow the determination of actual costs of each academic program and reliable estimates of the costs of new programs and the savings resulting from program elimination. Some of the concepts and computer programs from WICHE-NCHEMS may be useful, but this recommendation does not necessarily mean that that program should be adopted in its entirety. (Such analyses are time consuming and expensive, and funds must be budgeted for the purpose. The development of such techniques requires close cooperation between the academic and business officers of the institutions.)

5. A regular schedule of program review should be adopted. Each year a cluster of related programs should be reviewed, with the schedule arranged so that within about a five-year cycle all programs in the state would be reviewed. This process would be distinct from, but clearly related to, the comprehensive review of all the programs in a single institution which is carried out as part of the accreditation process. Essential features of such

a review would be an institutional self-study, which may include review by outside consultants and evaluation by the Commissioner's Office prior to presentation to the Board of Regents. Chief academic officers should be involved in the establishment of schedules, criteria, and methodology.

6. Proposals for new post-secondary educational programs should be drawn up as outlined in Board of Regents Item 2-001-R0973. This item should be amended as appropriate as items (1) through (5) above are implemented. The Board should act promptly to accept, reject, or return proposals to the originating unit with specific requests for additional information. Orderly institutional planning is generally predicated on a particular time schedule, and indefinite tabling should not be used as a substitute for definitive action by the Board.

7. The following "Assumptions" contained in a report on Academic Planning prepared by the Academic Vice Presidents of the University System in 1972 are still relevant:

   --Essential to every baccalaureate program are courses in the humanities, social and behavioral sciences, natural science and mathematics. Such courses engender educational breadth, strengthen a student's major field of concentration, provide depth and scope to a student's awareness of his cultural inheritance. These same course offerings are essential in serving the "general education" function of each institution and in preparing students for transfer to specialized programs in other institutions. Degree programs are "major" fields of concentration in which a specific degree is offered. A "major" field of concentration is different from a concentration of courses constituting a "minor" field.

   --If essentially identical programs on two or more campuses are fully utilized in terms of faculty and facilities, there may be little financial gain in combining these programs which are under-enrolled and could accept additional students without any increase in faculty or facilities, then there may be benefits in centering such programs on one campus.

--Humanities, social and behavioral sciences, natural sciences and math courses cited as essential to a baccalaureate program are not necessarily synonymous with degree programs.

--Reduction of duplication within the University System must be measured by the educational services available within reasonable geographic areas or reasonable commuting distance. In this respect, University System economies are not necessarily economies to the people of the State of Montana.

--There are some programs which are of sufficient importance to the State that they should be continued even in the face of low enrollments. Some of these programs are important to various economic interests in the State, and others contribute to the social and cultural well-being of the citizens. In this regard, the off-campus, as well as the on-campus, effects of program cutting or consolidation should be considered.

--The educational, social and economic needs of the State of Montana include post-baccalaureate, graduate, and professional programs offered by the University System. The role of higher education in the State should be to provide a service to the people for pursuing their educational goals without being strictly vocational and without being restricted to fields in which employment opportunities are presently available in Montana.

--Each institution must work for continued economies and program improvement on its own campus. The tendency toward proliferation of courses in a major area should be curbed by placing a reasonable maximum credit hour limitation on majors. Each institution should work to remove internal duplication, both in courses and in degree programs. Institutions should examine the possibility of cooperative programs and fuller use of specialized faculty and facilities.

--So that higher education in the State keeps abreast of the times, the Board of Regents should encourage the introduction of new and adequate programs in a continuum development. New programs to be launched within the System should be approved in principle and advanced by the Board of Regents.

--Guidelines for program analysis should be adopted to consider the following criteria on a regular basis:
  - --What is the enrollment in each program?
  - --What are the enrollments in the specific courses within the program?
  - --What courses serve other programs and what are the programs?
  - --What other departments support the programs?
  - --Is the program relevant to the needs of the students, times, and the State?
  - --Are faculties and facilities available?
  - --What would be the dollar savings if the program did not exist--to the State, students, and people?
  - --Should or could the program be offered on a cooperative basis?
  - --Is it within the institution's role and scope?
  - --Does the program attract and retain quality faculty and quality students?
  - --To what extent does the research effort benefit the State directly?
  - --Does the program generate Federal support?
  - --To what extent is the program available within the State or the region?
  - --What has the faculty committee reported on the program?
  - --Has the program been reviewed by the professional society and what have they reported?
  - --Other criteria to be developed on a formal basis.

INDEPENDENT COLLEGES

THE PRIVATE COLLEGE
and
STATEWIDE PROGRAMMATIC PLANNING

The existence of an innovative, value-oriented, high quality private sector is important for the vitality and strength of the entire spectrum of higher education in Montana. Competition and cooperation between the sectors provides stimulus to both the public and private sectors, while affording Montana students a healthy diversity of options.

Montana's three private colleges provide essential educational services to three of the state's major population areas, and they are the only colleges serving two of these areas.

They are providing education of a high qualitative level. All are accredited by the regional accrediting agency and have the appropriate professional recognition for the individual programs offered.

Recommendations for Improvement of the Planning Process.

The fundamental premise for long-range planning for the future of post-secondary education in Montana should be:

> All citizens of Montana should have access to a coordinated system of post-secondary education that fully utilizes all available resources, in both public and private sectors, to deliver quality educational services efficiently and effectively, with the costs to be distributed equitably among the beneficiaries, including the individual student and the taxpayer.

The wisdom of including Montana's three private colleges--and the human, physical and dollar resources they represent--in any comprehensive statewide plan for Montana would seem to be obvious. However, "wall of separation" semantics have sometimes concealed the fact that Rocky Mountain

College, College of Great Falls and Carroll College are, in fact, institutions in the public service, delivering quality educational programs to significant numbers of Montana citizens of increasingly diverse religious, racial, economic and age backgrounds in three of the state's major population centers.

In considering the potential and appropriate role of an individual institution in the context of other available educational delivery systems, both local and in other areas of the state, limitations as well as resources must be considered. Carroll, for example, offers no graduate programs; Helena area residents wishing graduate training are presently dependent on extension services from UM or MSU. Carroll and UM have cooperated in graduate summer programs, utilizing Carroll facilities and faculty with University approval. Planning options to be considered here might appropriately include expansion of the summer arrangement to the regular academic year, including MSU in the cooperative arrangement, or Carroll's consideration of limited graduate offerings in high need areas, such as education and business.

Cooperation among post-secondary institutions would seem to merit further investigation as a vehicle for reducing duplication while delivering quality educational service. The combined engineering program conducted jointly by Carroll and MSU and Montana Tech is an excellent example. Carroll's relationship with Vo-Tech is currently being studied as one aspect of a comprehensive review of possible cooperative areas between the college and the Helena public school system; the Vo-Tech students now utilize Carroll's physical education facilities and participate in the college's intramural program.

Cooperation with other than post-secondary institutions is also an important vehicle for delivery of educational services and merits further study. Clinical placements and practicum placements for students in professional and business oriented programs, advanced placement programs for high school seniors, and cooperative education placement of students in industry are current examples.

These examples serve as a backdrop for a number of specific recommendations regarding the planning process, if the goal is to develop the most comprehensive and effective post-secondary educational system available for Montana in the years immediately ahead:

> --There should be wide and open consideration of the role and potential contribution of all post-secondary educational service sources, including private colleges, proprietary institutions, and governmental and business training programs. Since one of the primary responsibilities of the State of Montana is to assure educational opportunities for all its citizens (not merely to conduct schools) it should encourage the development of a coordinated system of post-secondary education utilizing all the state's resources, both public and private.
>
> --Since the college-age population, in both Montana and the nation, will soon be declining, full utilization of existing facilities and faculties seems preferable to continued increasing of capacities through physical, staff and program expansion at the public institutions.
>
> --There should be thorough consideration of effective counseling sources through which citizens can obtain professional appraisal of their own educational needs and abilities and the best source for obtaining the continuing services needed.
>
> --Since the public as a whole benefits from a higher educational level in its citizens, motivational and enabling factors should be considered to assure utilization of the available post-secondary educational opportunities. Among these it would seem appropriate to review the case for and against financial assistance programs, such as the tuition grant and opportunity grans that are now offered by

thirty-five states, as a means of giving greater access and wider choice to students of all economic backgrounds.

COMMUNITY COLLEGES

SUB-COMMITTEE
on
COMMUNITY COLLEGES

The Deans of Instruction of the Community Colleges make the following comments and recommendations in response to Charge 5:

GENERAL

Community colleges have three major institutional missions to perform which are expressed in terms of educational programs. These are:

--the transfer program, comprised of courses which are equivalent to those found in the first two years of a baccalaureate program;
--the occupational program, composed of sequences of courses of one or two years' duration, which provide a student with skills necessary for entry into a job or career; and
--the community service program, the category which includes adult and continuing education, cultural, recreational and avocational skills courses. This report will be concerned primarily with the first two.

The transfer program of the institutions should be regarded as a single program and that additions or deletions of individual courses within this program should be possible solely upon an institution's own volition, assuming other criteria are met. It is presumed that credits earned in certain occupational programs be transferable to the University System (e.g., Business Administration and Human Services Technology). Such sequences of courses must be regarded as programs and their initiation or termination requires extra-institutional review and approval.

Item 2-001-R0973, "Policy Statement on Guidelines for Curriculum Proposals, Montana University System" (Revised) dated October 19, 1973 is recognized as applicable to program initiation.

Further elaboration of guidelines for such initiation is contained in a document entitled "Division of Responsibilities: Governance of Montana Community Colleges" that has been accepted by the Committee on Community Colleges of the Board of Regents and will be considered at a subsequent regular meeting of the Board.

Because of the need for community colleges to remain responsive to short-term needs in specific occupational areas, attention is drawn to the above documents. While all continuing academic and technical programs will continue to require coordination and approval by the Regents, it is imperative that community colleges be in a position to implement progress programs quickly in those specific occupational skills areas whose employment markets are finite and short-term.

PROGRAM INITIATION

All programs incorporated into the community college curriculum should arise from the expression of a need for such training and education on the part of some sector of the community, including citizens-at-large, students, faculty, or administration. Upon the recognition of such a need, the institution's academic council, acting in concert with the administration, shall designate an advisory council chosen from the community to study the feasibility of a new program. Upon their concurrence that the program is both needed and feasible, a curriculum will be devised and submitted to the academic council for consideration, alteration, and eventual approval. Through this latter process, the department or division chairman most directly affected by this addition becomes responsible for overall coordination and expedition.

The approved program shall be passed on to the President of the institution for presentation to the board of trustees. It is then their responsibility, if they approve the program, to submit it to the State Coordinator for Community Colleges who will ask for its review by the Board of Regents.

The criteria by which a proposed program is assessed should include the following:

1) Identify need for the program in terms of employment projections and trends.
2) The program should be in agreement with the stated mission and purposes of the institution.
3) Articulation with the academic sector of the college.
4) The program should not ordinarily compete with nor unnecessarily duplicate offerings in similar institutions in the same geographic area.
5) There should be evidences of student interest and enrollment in the program.
6) Availability of qualified faculty.
7) Suitability of physical plant.
8) Availability of adequate funding to meet the need for faculty, facilities, and library resources.

PROGRAM REVIEW

The subcommittee recognizes a distinct need for systematic, periodic review of programs. Programs should be terminated after a review prompted by decreasing enrollments, and a procedure should be followed using essentially the same criteria as for assessment above. New programs should be reviewed annually while older, established programs could be reviewed less often, perhaps every two years.

Program termination should be arranged so as to permit currently enrolled freshmen to complete the second year of a two-year program.

LIBRARY RESOURCES

The library in the community college should provide resources for both academic and occupational programs. In new program initiation the librarian is apprised of the nature and scope of a program when the academic council receives the proposal for consideration. However, the acquisition of needed library resources and media should not begin until the instructional personnel have been appointed and the syllabi has been drafted. The community college librarian should work closely with identifying appropriate library materials.

Two basic responsibilities of the librarian should be:

1) Involvement in instructional planning, and
2) Development of procedures for periodic review of library services by advisory committees and faculty.

VOCATIONAL-TECHNICAL CENTERS

SUB-COMMITTEE
on
VOCATIONAL-TECHNICAL CENTERS

SUGGESTIONS FOR IMPROVEMENT OF VOCATIONAL-TECHNICAL PROGRAMMATIC PLANNING

The sub-committee on programmatic planning dealing with Charge 5 specifically relating to the vo-tech centers reports the following:

Policy of the State Board of Public Education is presently being gathered, however, to meet the established deadlines for this report, we progressed without the benefit of written policy in accordance with 75-7703 R.C.M.

To further establish the additional recommendations of this sub-committee, we feel it necessary to define positions we think would improve programmatic planning. Some of these are, at least in part, in effect at the present time.

--The State Board of Public Education is expected to be the "catalytic"agent" in the state responsible for leadership in promoting, planning, implementing and funding the programs in post-secondary vocational technical centers.

--Vocational education program planning has to be a continuous interaction between the designated post-secondary vocational technical center directors and the centers.

--Organization and administration, role of personnel, and fiscal policies are of the utmost importance in program plans at the state level.

--It is essential that all types of existing and proposed schools, institutions and training media in the state be identified and their present and potential contribution be considered when total uniform program planning is undertaken. The ultimate goal is to assure the best use of funds in the light of the urgent needs of all the people of that state, as well as those of the employers of the state.

--The total problem of programmatic planning must be structured and decisions made using a planning method capable of integrating the knowledge and skills of many people and organizations.

Recognizing the above positions, it is also considered essential that program planning utilize a system approach. We would, therefore, recommend the following:

1) The planning should take into consideration:

--the existing post-secondary vocational technical education programs in the state,
--the supply demand for trained persons,
--the existing and projected social-economic trends,
--the available resources and funds.

2) Initial planning should be the institution's responsiibility. Results of planned programs should matriculate through the following organized administrative and governance structure.

--Local center.
--Office of the Executive Officer for Vocational Education.(State office for administration of vocational education should be free to and responsible for requesting specific programs to be planned to meet particular state needs.
--State Board of Public Education.

3) The institution level planning process should be common among all post-secondary vocational technical centers. The method should not be rigid, but a conceptual frame-work allowing input for identified resources and using the following standard procedure.

a) Identification of specific need for trainees and/or training.
b) Establishment and use of an advisory committee

equally representative of labor and management within the occupational field, and including lay members representing the community and related areas of interest. All meetings are formally structured and minutes are kept.

c) Documentation of need for the training program which includes--scope or occupational cluster, identification of special-need populations, surveys of job opportunities, identification of potential enrollees and their general needs, analysis of the occupational cluster to determine its potential demands, analysis of existing curricula, and evaluation of facilities, costs and other factors affecting the offering of the program.
    1) Analysis of tasks, knowledge and understanding necessary for successful job performance and translation of these into areas of instruction.
    2) Analysis of performance levels adequate for success in the occupation with these levels measured in proficiencies.
    3) Identification of equipment, instructional materials and facilities necessary for training to meet job performance levels with supporting costs.
    4) Establishment of criteria for selection of instructor, and identification of candidate to assure successful instruction with supporting cost.
    5) Development of syllabus based upon need identification, subject identification, facilities and methods used for instruction, sequential relationships of task skills, knowledges and understandings; common background of enrollees, criteria for approval from all agencies concerned, seasonal employment; and other pertinent considerations.
    6) Preparation of proposal for the state board, including the above and a categorical budget.
    7) Development of courses of study* based on

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*Courses of study are developed cooperatively by the instructor(s), the administration including counseling and curriculum staff, advisory committee members and others. In-service training in course of study development is required of all staff members.

occupational analysis and enrollee needs. All courses of study to include: job performance levels, tasks performed on the job, measurements of performance levels (behavioral objectives), instructional materials and methods, contact hours per unit, and instructional sequence.

8) Quarterly and annual evaluation/revision of each course of study and entire syllabus.*
9) Documentation of program content and its relationship to other program content and/or facilities of the center.
10) Requests for approval from all state, federal, and independent agencies concerned with, or of significance to, successful employment of the trainee.

4) The state level reviews of the planned program should be made by a designated director for the post-secondary vocational technical centers. Programs will be submitted to the director by each center at least three months prior to final approval by the State Board of Public Education. Exceptions will be accepted in instances where an unforeseen need of significant merit as determined by the executive officer for vocational education. Upon review by the designated director the proposals will be submitted to the State Board of Public Education for final approval. Approval should be made by the State Board of Public Education during their schedulled April meeting.

5) State Board of Public Education. With the significant increase in post-secondary vocational technical center program and activity, it becomes necessary that the State Board of Public Education be encouraged to designate certain and adequate numbers of Board meetings to sufficiently meet the needs of providing adequate state board leadership for post-secondary vocational technical centers. Such

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*Involving staff and advisory committee members.

activities may include but not be limited to the following programmatic planning activities.

a) Thorough review of program plans submitted by the designated post-secondary vocational technical center director.
b) Extensive review of financial needs for post-secondary vocational technical centers.
c) On-site review of center programs.
d) Thorough review of research and evaluation of the P.S.V.T. Center programs.
e) Establish and review, at least annually, Board policy regarding vocational education and particularly, policy relating to the P.S.V.T. Center programs.
f) Consideration of recommended legislation by the State Board in relationship to P.S.V.T. Centers.

6) Any new or revised policy of the State Board of Public Education shall be adopted well in advance (six months) of a new program and fiscal year, wherever possible. After formal state board approval and recording in minutes, the policies should be reproduced and distributed to all concerned so they can be taken into consideration in preparing program plans and budgets.

SUMMARY OF RECOMMENDATIONS

To facilitate improvement of programmatic planning, it is necessary to have defined policies, established procedures, and a more direct association with state vocational education staff, as well as the Public Board of Education. The recommendation outlining a designated director for post-secondary vocational technical centers, would provide necessary leadership and coordination for the five centers. This suggested position should be an integral part of the Office of the Superintendent of Public Instruction and be responsible to the executive officer of vocational education ensuring proper statewide planning and coordination of all vocational education. This staff member would be assigned full-time responsibilities for the coordination and development of the post-secondary vocational technical centers. It would be his or her responsibility to carry out board policies concerning certain operations and establish administrative procedures to include planning, budgeting, reporting, etc.

This individual would review all program planning information from the centers in a manner consistent with developed policies, and procedures, possibly resulting from recommendations, and submit them to the State Board of Public Education for approval.

APPENDICES

GRADUATE EDUCATION AT THE UNIVERSITY OF MONTANA

BEST COPY AVAILABLE

General Statement

Advanced study through graduate programs is a significant part of the educational mission of the University of Montana. In fulfilling its role as a comprehensive institution of higher learning, the University provides its students a graduate curriculum designed to expand the frontiers of knowledge, to stimulate students and faculty toward the discovery and dissemination of new knowledge, to develop new and effective approaches to teaching, and to enlarge the advanced student's capacity for leadership in humanistic, scientific, and professional service.

The University's graduate program is not all-inclusive and is designed to concentrate on particular programs and special fields in which attainment of excellence and a competitive position are possible. Thus, the special expertise of the faculty, in particular fields, the unusual characteristics of our geographical and cultural region, and the uniqueness of the graduate program itself all contribute to the University's mission to provide opportunities for its students to pursue graduate studies.

The graduate program exploits special advantages of location, faculty expertise, natural resources, and physical facilities. Master's degree programs are offered in most fields; and doctoral degree programs are offered in a limited number of carefully selected disciplines.

The graduate curriculum makes an important contribution to the University's undergraduate programs. Graduate programs provide expanded opportunities for interaction between undergraduate and graduate students. Students tend to teach each other; and graduate students often provide an intellectual stimulus to the educational life of the undergraduate program. Graduate students benefit from sharing their work with undergraduates. In addition, because superior and accomplished faculty members are often attracted to universities offering graduate programs in their field of competence, graduate programs provide a distinct benefit to the undergraduate program and its students.

Scholarship and research are important features in the work of graduate students; and in departments in which graduate research flourishes, undergraduates tend to become involved fruitfully in scholarly research efforts. Faculty members actively engaged in research in graduate programs can more readily obtain grants from off-campus agencies, which often provide financial aid, stipends, and other forms of assistance, to both graduate and undergraduate students.

Graduate students and faculty members make valuable contributions to the State and federal agencies, industries, various levels of public education, and the professions through both research activities and service functions.

Thus graduate study is an important part of the overall mission of the institution. It is also an efficient means toward the achievement of other, prescribed and well established purposes of the University.

Objectives

The following are objectives and policies of the various programs of the Graduate School of the University of Montana:

To develop and foster at the post-baccalaureate level the dissemination of knowledge, training in professional skills and the search for as yet undiscovered truths and superior (research/scholarly) techniques;

To educate and train graduate students to become research scholars, teachers or professional careerists;

To make available advanced courses, seminars, workshops, research opportunities, etc. for the people of Montana to fulfill their desires and needs for continuing education beyond their baccalaureate eduction;

To develop and maintain doctoral degree programs in those fields in which the faculty members have recognized excellence, in which there are adequate resources and public support to justify these programs and in which there is a regional or national need for the graduates;

To encourage in individual departments and schools a continuing study, evaluation and redefinition of their graduate programs (goals, objectives, and procedures) and to have an independent evaluation of these programs by peers outside of the department or school every 5-6 years;

To recognize in the program evaluation process a need for combining the retention of much of the traditional training and basic educational cores of a particular discipline with the need for new emphases, new skills, and innovative approaches as responses both to the advancement of knowledge and to social demands, the aim of which should be the union of the excellent foundations provided by the past and the traditional with the vitality and excitement associated with innovation and relevance;

To develop programs (degree or nondegree) which will provide opportunities for students with different intellectual capabilities to be educated and trained to the highest possible level;

To have in the faculty members and graduate students involved in the various graduate programs a rich resource of knowledge and skills to which the State of Montana can turn for consultation, advice and research toward the solution of important social and technological problems; and

To encourage faculty to continue to be active and current in their fields in order to insure that they remain interesting and enthusiastic in their teaching, to attract funding that provides equipment beyond that characteristic of an undergraduate program, to develop and maintain expertise in new techniques as these appear, and in these ways to provide a stronger *undergraduate* education than could otherwise be provided.

The Graduate Council

The Graduate Council is composed of 12 faculty members appointed by the President of the University from recommendations submitted to him by the Executive Committee of the Faculty Senate and representing equally the three general divisions of the faculty (Natural Sciences, Humanities and Social Sciences, and Professional Schools); plus 3 graduate students recommended by the Graduate Student Union who represent the same three divisions as stated for the faculty. The Graduate Council meets once every week throughout the academic year. The meetings are chaired by the Dean of the Graduate School who also serves as secretary.

Decisions on substantive matters relating to graduate programs, curricula, general Graduate School regulations, etc., are forwarded to the Faculty Senate and to the Academic Vice President for final approval.

Functions and responsibilities of the Graduate Council include:

(1) the promotion, review and evaluation of graduate programs to insure vitality, currency and quality;

(2) review and recommendations on all requests for new programs, for deletion of programs, and for curriculum additions or changes by departments or schools;

(3) consideration of suggested changes in Graduate School regulations as published in the Graduate Catalog:

(4) consideration of issues raised by graduate students relating to regulations, specific graduate programs, or their welfare;

(5) the initiation and supervision of interdisciplinary graduate programs in response to national, regional, or state needs, or to the desires and needs of sufficient numbers of graduate students.

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Of the various functions of the Graduate Council, by far the most important and time-consuming one involves the review and evaluation of individual graduate degree programs. The Council encourages all of the departments and schools to engage in a nearly continuous process of program self-analysis. It is the intention of the Council to undertake its own review and evaluation of each graduate degree program at least every five years.

The evaluation process has operated in the following manner since 1971: (1) The Graduate Council developed a questionnaire which, when completed by an individual department or school, provides statistical data regarding admission of students, numbers of graduates, the qualifications of faculty members, publications of research or scholarly work, etc.

However, the questionnaire also requests that the faculty of the department or school describe what it considers to be its unique goals, its philosophy of educating its own graduate students, the limitations (self-imposed and other) on its programs, its perception of the value of the program for students, faculty, the university, the state, region and/or nation, and a number of other considerations. One very important consideration is the demonstration by a department of how its graduate program fits into a logical overall pattern for the University of Montana and for the state and region. (2) After answers to the questionnaire have been reviewed and discussed by the Graduate Council, separate interviews are held with representative faculty members, with some graduate students enrolled in that program, and with the department chairman or school dean. (3) If the Council has serious questions about a program, but feels that it needs additional counsel in the evaluation process, it requests of the University Administration that a visiting team of recognized scholars in the particular discipline from other universities be brought to the campus. They submit their independent evaluations to the administration and to the Graduate Council. (4) Finally, wher the Graduate Council has made its decisions, a report containing recommendations with regard to the program is sent to the department or school and to the Academic Vice President. Decisions are based on quality criteria. When it is obvious that a viable graduate program can be attained only with increased state funding, this fact is clearly defined, along with its implications for other programs, and the final decision rests with the University Administration.

The process described above has been a rigorous and time-consuming one. The review and evaluation of twelve doctoral programs required two years of work by the Graduate Council. A number of Master's degree programs have also been reviewed and others will be considered as time permits.

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From what has been described above, it is obvious that the Graduate Council is mainly involved in a holding action - the review and evaluation of existing programs. Because of the limitations of funds in support of graduate education, there is little or no opportunity for the Council to function as a leading group in the encouragement of new or innovative graduate programs - unless they are to develop at the expense of other currently approved programs.

Benefits to the State of Montana Derived from Having Good Graduate Programs at the University of Montana

1. Helping to maintain the quality and standards of undergraduate education through - (a) attraction of better teachers, (b) association of undergraduates with graduate students in advanced classes, seminars and research projects, (c) availability of outside grant funds to purchase sophisticated instruments and apparatus vital to modern undergraduate education as well as research, and to augment meager library funds available from the state budget.

2. Involvement of graduate students and graduate level faculty in research, service, and training of value to the State of Montana. Some examples include:

   (a) Graduate programs and federally supported institutes for teachers, especially in biological sciences and mathematics. These have helped tremendously in upgrading the education and teaching abilities of secondary school teachers in Montana.

   (b) The Geology Department is strongly field oriented and its graduates have mapped large areas of the state; such studies are of direct benefit to the mining and petroleum industries. In recent years students have also been involved in environmental research projects, mapping flood plains and earthquake hazards, determining geothermal energy resources, preparing impact statements for Lolo and Bitterroot National Forests, working on the environmental impact on coal development in eastern Montana. Graduate students also form a summer labor pool for mining companies with local offices.

   (c) In Forestry, graduate training provides people primarily employed by agencies, both state and federal, and industries within Montana. Research by graduate students and faculty has been and will be of vital importance to the state in numerous ways, including land and timber management, improvement of forest yields on a sound economic basis, recreation use and management in our forests, ecological studies involving forest lands, their use and the wildlife population, studies of the nature of forest fires and their controlled use, etc.

   (d) In Sociology, the only graduate program in the 3-state region of Idaho, Montana and Wyoming is in Missoula. Students and faculty from this program constantly provide various kinds of research, service, and support for numerous public agencies in the state. These include the State Planning Board, the departments of Public Welfare and Public Health, State Prison, State Board of Pardons, Warm Springs State Hospital, Butte and Helena Model Cities Demonstration Agencies, the News Careers project at Glasgow AFB. Also served are a number of municipal governments and agencies, such as school systems, juvenile probation departments, police and sheriff departments, mental health organizations, drug control programs, etc.

(e) In Psychology, there is a considerable involvement of graduate students in consultation and testing for state agencies such as the State Prison, Warm Springs Hospital, the Boulder Training School and also with the Regional Mental Health Center, Missoula Vocational Technical School and the Missoula Child Development Center. The students also travel to a number of high schools and to Indian reservations to do testing and teacher training. A number of their graduates are regularly hired within the state.

(f) Research activities of graduate students and faculty members in Microbiology provide for interaction, collaborative research, and service to non-University health-related activities in the state. For examples, collaborative research is being done with veterinarians on animal diseases, and with M.D.'s and Health Department personnel on human diseases.

Graduates of the program are currently employed in the state in various health-related activities by private industry, City-County Health Departments, State Health and Environmental Sciences Department, etc.

(g) In Chemistry, a number of the studies involve problems of ecological importance. Examples include the analysis of our Western Montana natural waters for the presence of mercury and other toxic heavy metals and development of better methods of such analysis, the use of ozone as a potential water purifier, and the various investigations of the Wood Chemistry Laboratory dealing with understanding of fires of cellulosic materials. Incidentally, the Director of the Wood Chemistry Laboratory feels that at this time this laboratory may be one of the best equipped in the world for this work - and essentially all of the funding for expensive instruments, and for hiring postdoctoral and graduate research assistants has been obtained through outside grants.

In addition, the department offers short courses for continuing education of technical workers in the state (e.g., medical technologists and State Health Department personnel) and provides specialized facilities and expert consulting services for local or state departments, federal agency laboratories, or individuals.

(h) In Botany, much of the graduate student and faculty research is now concerned with vital problems of environmental concern. Typical examples include: (1) the analysis of food products, and animal and plant tissues in selected areas for the presence of fluoride and for the presence of toxic heavy metals, (2) study and analysis of Missoula Sewage Plant sludge with recommendations for further use, (3) pesticide accumulation in birds of prey, (4) water quality studies (before and after installation of large recreational complexes), (5) studies of effects of air pollutants on various types of vegetation, (6) research on ecosystem composition and dynamics of Montana forest vegetation, grasslands, etc., to gather a data basis for proper management of our natural resources, watersheds and resource-related industries,

(7) studies of fertilization of various conifers as related to growth and wood quality of importance to the lumber industry, (8) studies of selenium in vegetation, (9) studies of plant viruses related to disease producers in fruits and vegetables, (10) effects of radiation on plants - knowledge of which may lead to improved cancer therapy, (11) study of various heavy metal movements in the ecosystem in relation to various toxicity problems.

(i) In Mathematics, advanced professional education and training is provided to many people who will work within the state. This includes not only mathematicians and statisticians now teaching in the colleges and universities of the state or employed by state or federal agencies but also advanced mathematical training in courses of value to graduate students in other fields, e.g. the biological sciences, physical sciences, Forestry, Clinical Psychology and Sociology.

Valuable continuing education has been provided by summer and academic year institutes for updating the competence of secondary school teachers and lower division college teachers. In addition, graduate faculty members provide visiting consulting services to high school students and teachers.

Consultation service is provided for scientists and engineers throughout the state on research and development projects.

(j) Zoology faculty members and graduate students provide consulting services to government and private agencies and to individuals regarding significant problems of public concern; including water quality and pollution problems, ecological impact evaluations of land use, wildlife and fish management, specific human health problems, wildlife diseases, etc. In addition, they perform an important reference service in providing information and advice to teachers, public school children, newspapers, medical-dental-veterinary professionals and other interested citizens throughout the state on the identification, care, health and related public health problems of native Montana animals and of exotic pets.

(k) In addition to the tremendously important graduate programs for upgrading of secondary school teachers in which the departments of Botany, Chemistry, English, Health and Physical Education, Mathematics and Zoology are involved both during the academic year and in special summer institutes and programs, the School of Education doctoral degree students and faculty members spend a large percentage of their time in research, consultation and services of direct benefit to the State of Montana and its people. For example, the Division of Educational Research and Services of the School of Education has been providing extensive and diverse services to Montana schools, communities and state agencies. During the past year this Division has assisted twenty different Montana school districts on projects such as the development of school board policy handbooks, community-school planning for program and facility needs, in-service education, curriculum development, and program evaluation. In addition, 5,000 copies of a "Handbook for Montana School Board Members" was prepared for and distributed throughout the Montena School Boards Association. The Division has worked with numerous State Agencies over the past few years and has distributed, at request, over 4,000 copies of a series of educational monographs throughout the United States. These services have been made available as part of the professional training and experiences for future school administrators and educational specialists enrolled in the School of Education doctoral degree program.

A large percentage of the Doctor of Education graduates of the University of Montana since the first such degree was granted in 1958 have been hired in various kinds of education positions within the State of Montana (of 98 total Ed.D.'s graduated to date (1-1-74), 34 are employed in Montana). The following breakdown may be of interest:

Total UM Ed.Ds	Number in Montana	
4	3	College presidents/vice presidents
6	4	College deans/department chairmen
13	4	Professors
17	3	Associate professors
14	7	Assistant professors
3	1	Instructor
9	1	Directors of research/extension/etc.
21	7	School administrators
4	3	Teachers
6	1	Consultants
1	0	Deceased

3. Interdisciplinary Research and Services

In addition to the specifically department-related work mentioned above which is of benefit to the State of Montana, there are a great variety of the important economic, social and technological problems which face the State of Montana now and in the future which require the combined efforts and expertise of University of Montana faculty members with graduate students working under their supervision, as well as staff members in the various state agencies. These combined efforts represent

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interdisciplinary and multidisciplinary research approaches in attempts to arrive at effective solutions. The following list represents only a cross section of the involvement of University of Montana faculty and graduate students in critical and applied research directed toward the needs of the state, the Rocky Mountain region and the nation.

Energy Studies Program

Faculty and graduate students from 10-12 different departments are working closely with similar groups from Montana State University and the Montana School of Mineral Science and Technology and with personnel of the Montana Department of Natural Resources and Conservation on a great variety of complex problems associated primarily with insuring an orderly, approved and manageable development of the Eastern Montana coal deposits and the related problems related to water resources, air pollution, land reclamation, etc.

The Institute for Social Science Research

This is a social science outreach organization which relates the expertise available in University faculty members, research assistants and graduate students to problems of human organizations and social relationships throughout the state. The research efforts have primarily a direct applied emphasis because the sponsors wish information and analyses which will contribute immediately to social planning designs, resolution of organizational, community, regional and interpersonal problems; formulation of public policy concerning social issues, implementation of social legislation, etc. The Institute personnel are actively engaged in assisting public and private agencies in Montana to professionalize their personnel and in other ways move closer to achieving their basic objectives as social institutions.

Environmental Studies Program

This is a Master's Degree program involving as many as 33 faculty members from 17 different departments. The graduate students, under the direction of faculty members, are engaged heavily in research on problems related to the degradation (or potential degradation) of environmental values represented in natural resources of the state and region. For example, problems in air and water pollution and land use are continually under investigation.

Bureau of Business and Economic Research

This bureau is part of the School of Business Administration. Its major objective is to serve Montana citizens, business, state and local government, nonprofit organizations and others interested in business and economic affairs. The Bureau members conduct economic studies, present and interpret information on current business and economic developments in the state, encourage and assist students and faculty members in research efforts along the lines indicated, and offer consulting and information services to business, government and the public.

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Field Station Programs

The Forest and Conservation Experiment Station including its extensive resources available in the Lubrecht Forest and the University Biological Station at Yellow Bay, Flathead Lake involve students and faculty members from at least 8 departments and schools in research efforts directed toward natural resources of the state and region (forests, water, land, and wildlife). These involve studies in the biological sciences, physical sciences and also social sciences. In many cases, these faculty members and students cooperate with personnel from state agencies. Many problems investigated are of direct interest to the forest industries of the state, to the U. S. Forest Service, to the Montana Fish and Game Department, etc.

The University of Montana Biological Station is the nation's second oldest inland biological field station. Of about seventy inland units in the United States, our station ranks fifth in terms of student population, programs and facilities. The Station has a national reputation for the excellence of its staff, courses and research programs. Because of the diversity of the environment close at hand, a tremendous number of biological and geological problems can be readily studied. Outstanding graduate students and visiting faculty members from a number of universities across the country work closely together. Research projects are conducted both independently and in cooperation with biologists and naturalists in Glacier Park, at the Rocky Mountain Laboratory in Hamilton, at the National Bison Refuge at Moiese and with State Fish and Game Department personnel throughout the state.

Other examples of such interdisciplinary efforts are the Water Research Program, the Wildlife Biology Program and Wildlife Research Unit, and the newer Land Use Planning Program and Bureau of Quantitative Studies.

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In summary to this section, it should be noted that the above listing represents only a cross-sectional and generalized overview of the types of services and research being done by graduate students and faculty members in doctoral degree-granting departments which result in direct benefit to the State of Montana and its people. Many more examples could be listed in a complete survey. The similar relationships between graduate study and research and state benefits for non-doctoral degree granting departments have not been included here.

It should be obvious that the faculty of the University of Montana are extremely cognizant of the importance of their role in providing community, state and regional services through research, consultation and a variety of service functions.

Doctoral Degree Programs at the University of Montana

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I. Finance

Attached are reports for the two most recent prior years comparing financial support for departments with doctoral programs against departments without doctoral programs. The following very obvious and striking generalities should be noted:

1. The average general budget support (State) per student credit hour is actually slightly less in each year for doctoral degree-granting departments than for those departments not having doctoral degree programs.

2. The average outside support per student credit hour generated by doctoral program departments is considerably greater than for those without doctoral degrees.

   (Actually this has provided 37-38% of the total average support for the doctoral degree departments. Excluding History, which was for two years under a moratorium in its doctoral program, this average percent funding by outside sources would be about 40%.)

   Several of the doctoral degree departments bring in from outside grants nearly as much (or sometimes even more) money as the total state funding per year.

There are some obvious very important consequences of the above facts:

1. Doctoral degree granting departments do not cost the state of Montana more money than those departments not having doctoral programs.

2. Dropping the doctoral programs would not save the state money now, since it appears obvious that the doctoral programs (and undoubtedly a good share of the rest of the departments' programs) are funded by outside-of-state sources. Gradually - if faculty numbers could be reduced without harming the undergraduate programs - some money could be saved by dropping these doctoral programs.

3. If outside funding should not be obtained by these doctoral degree departments over a period of several years, they would have to drop the doctoral programs. With the extremely tight University budgets, there is simply no way in which the extra funding required could be shifted from other University funds.

II. Evaluation of Doctoral Degree Programs

The Graduate Council at the University of Montana has for well over two years been carrying out a very rigorous evaluation of our doctoral degree programs. Of the twelve programs in existence three years ago:

One has been eliminated and does not appear on the attached financial sheets.

One was in a state of moratorium for two years and not accepting further students pending the obtaining of better outside funding and also evaluation by its national organization. It has been given a very good report by the outside evaluation team, the matter of sufficient funding has now been resolved and the moratorium has been lifted.

One, after further evaluation by a visiting team from its national organization, is now under a state of moratorium with respect to acceptance of new students pending significant changes and approval by Graduate Council.

One has been informed that it must significantly reduce its numbers of doctoral candidates.

The remaining eight have been approved at their present level of operation.

It should be obvious that the evaluation task is not being taken lightly. In addition, there has been a self-imposed moratorium on consideration of any new doctoral programs (and in fact new departmental graduate degree programs in general) for over three years now.

MASTER'S DEGREE PROGRAMS
UNIVERSITY OF MONTANA

(Addendum to Report on Graduate Education at the University of Montana)

At any good university it is essential that graduate work, at least to the level of a Master's Degree be offered in every department or school which has a Baccalaureate degree program. Reasons for this have been discussed in detail in the main body of the report. In summary, however, these reasons are as follows:

--Attraction of better quality faculty members is made possible by virtue of the stimulation and challenge offered by the opportunity to work with advanced degree level students. Research and creative work are necessities for a faculty member in maintaining currency in his or her own field; therefore, providing an up-to-date thrust and vigor to his or her teaching responsibilities.

--Significant research and creative work are expected as part of the main responsibilities of true universities. Participation of graduate students working under the direction of a faculty member greatly increases the scholarly output of a given department and enhances the faculty member's opportunities to make use of his own research or creative talents.

--Undergraduate students and undergraduate programs are benefitted greatly as corollaries to the above through: (1) the presence of better and more stimulating teachers, (2) the availability of better equipment and facilities, often made possible only through outside agency grant funds obtained by individual faculty members in support of their research activities, (3) the interaction between graduate students and undergraduates which provides a further stimulus to the intellectual growth of undergraduates.

--The state and the region profit from the above-mentioned internal benefits of having graduate programs. In addition, through specific research activities and service functions performed by graduate students as well as their faculty advisors, valuable contributions are made to state and federal agencies, to industries, to various levels of other public education and to professional people.

COMPARISON OF FINANCIAL SUPPORT IN DOCTORAL PROGRAM DEPARTMENTS/SCHOOLS VERSUS NON DOCTORAL PROGRAM DEPARTMENT/SCHOOLS

University of Montana

NON DOCTORAL PROGRAM DEPARTMENTS/SCHOOLS

DEPARTMENT/SCHOOL	UM INSTRUCTION & DEPARTMENTAL RESEARCH BUDGET SUPPORT*	OUTSIDE SUPPORT**	FISCAL YEAR STUDENT CREDIT HOURS	UM INSTRUCTION & DEPARTMENTAL RESEARCH BUDGET SUPPORT PER SCH	OUTSIDE SUPPORT PER SCH
Anthropology	$ 114,760.83	$ 11,819.46	18,100	$ 6.34	$ .65
Computer Science	75,684.40	8,636.56	1,816	41.68	4.76
Economics	148,109.65	1,420.15	10,463	14.16	.14
English	362,582.43		19,831	18.28	
Foreign Languages	394,274.75		23,324	16.90	
Geography	81,950.27	10,698.36	9,652	8.49	1.11
HPER	219,808.37	25,434.19	15,334	14.33	1.66
Home Economics	108,958.87	54,289.01	5,323	20.47	10.20
Philosophy	134,731.76	66.33	9,815	13.73	.01
Physics and Astronomy	118,534.02	45,481.00	4,552	26.04	9.99
Political Science	125,383.75	5,984.66	11,522	10.88	.52
Religious Studies	71,871.37		2,337	30.75	
Speech Communication	109,156.11	749.17	4,905	22.25	.15
Speech Path. & Audio	110,260.48	132,699.10	2,261	48.77	58.69
School of Fine Arts:					
Art	193,813.35		9,246	20.96	
Drama	107,304.27		3,674	29.21	
Music	358,769.73		7,710	46.53	
Subtotal	659,887.35	38,723.96	20,630	31.99	1.88
School of Business Admin.					
Accounting & Finance	153,856.45		10,125	15.20	
Management	166,892.65		10,640	15.69	
Bus. Ed. & Office Admin.	60,160.94		2,454	24.52	
Subtotal	380,910.04	81,624.24	23,219	16.41	3.52
School of Journalism					
Journalism	127,608.55		2,769	46.08	
Radio & Television	45,682.90		566	80.71	
Subtotal	173,291.45	528.00	3,335	51.96	.16
School of Pharmacy	170,471.93	88,731.83	3,842	44.37	23.10
School of Law	257,756.15 (1)	23,093.85	7,706	33.45	3.00
Total	$3,818,383.98	$ 529,979.87	197,967	$19.29	$ 2.68

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FISCAL YEAR 1970-71

DOCTORAL PROGRAM DEPARTMENTS/SCHOOLS

DEPARTMENT/SCHOOL	UM INSTRUCTION & DEPARTMENTAL RESEARCH BUDGET SUPPORT*	OUTSIDE SUPPORT**	FISCAL YEAR STUDENT CREDIT HOURS	UM INSTRUCTION & DEPARTMENTAL RESEARCH BUDGET SUPPORT PER SCH	OUTSIDE SUPPORT PER SCH
Botany	$ 244,062.76 (2)	$ 217,729.31	10,583	$23.06	$20.57
Chemistry	309,024.86	217,362.75	9,805	31.52	22.17
Geology	267,722.50	79,271.83	8,055	33.24	9.84
History	273,590.38	17,225.97	21,470	12.74	.80
Mathematics	302,537.99	161,516.88 (5)	22,872	13.23	7.06
Microbiology	161,404.45	156,784.68	6,529	24.72	24.01
Psychology	300,342.03	182,585.49	16,612	18.08	10.99
Sociology	194,737.06	335,017.36	25,029	7.78	13.39
Zoology	282,640.18 (3)	47,420.26	11,292	25.03	4.20
School of Education	523,657.16	192,833.87	39,012	13.42	4.94
School of Forestry	263,549.99 (4)	183,325.93	9,991	26.38	18.35
Total	$3,123,269.36	$1,791,074.33	181,250	$17.23	$ 9.88

* Includes only Instruction and Departmental Research Budgets

** Includes all non-general budget dollars available to the academic departments and schools

(1)	Includes:	Law	$254,456.15
		Dixon Trust	3,300.00
			$257,756.15
(2)	Includes:	Botany	$229,111.56
		Bio. Station (50%)	14,951.20
			$244,062.76
(3)	Includes:	Zoology	$267,688.99
		Bio. Station (50%)	14,951.19
			$282,640.18
(4)	Includes:	Forestry	$259,032.43
		Wildlife Management	4,517.56
			$263,549.99
(5)	Excludes:	Summer Institute (861-5)	$ 22,349.90
		Summer Institute (861-8)	17,918.00

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Fiscal Year 1971-72

NON DOCTORAL PROGRAM DEPARTMENTS/SCHOOLS

DEPARTMENT/SCHOOL	UM INSTRUCTION & DEPARTMENTAL RESEARCH BUDGET SUPPORT*	OUTSIDE SUPPORT**	FISCAL YEAR STUDENT CREDIT HOURS	UM INSTRUCTION & DEPARTMENTAL RESEARCH BUDGET SUPPORT PER SCH	OUTSIDE SUPPORT PER SCH
Anthropology	$ 110,345.97	$ 61,324.17	14,805	$ 7.45	$ 4.14
Computer Science	75,574.70	4,165.97	2,668	28.33	1.56
Economics	145,094.86	3,118.66	12,573	11.54	.25
English	365,850.64		19,975	18.32	
Foreign Languages	398,176.89		16,939	23.51	
Geography	85,489.47	11,665.12	10,003	8.55	1.17
HPER	217,482.51	20,323.96	14,733	14.76	1.38
Home Economics	111,693.16	50,469.31	7,243	15.42	6.97
Philosophy	151,587.97	187.21	10,610	14.29	.02
Physics and Astronomy	129,459.37	7,101.00	5,815	22.26	1.22
Political Science	119,024.02	2,630.27	12,420	9.58	.19
Religious Studies	84,403.52	35.70	2,766	30.51	.01
Speech Communication	113,483.54	10,809.49	6,478	17.52	1.67
Speech Path. & Audio.	113,963.59	92,888.95	2,527	45.10	36.76
School of Fine Arts:					
Art	198,502.39		10,945	18.14	
Drama	109,465.94		3,692	29.65	
Music	347,764.58		8,490	40.96	
Subtotal	$ 655,732.91	85,252.38	23,127	28.35	3.69
School of Bus. Admin:					
Accounting & Finance	$ 143,092.90		11,368	12.59	
Management	179,583.45		11,519	15.59	
Bus. Ed. & Off. Ad.	61,112.39		2,404	25.42	
Subtotal	$ 383,788.74	47,662.28	25,291	$15.17	$ 1.88
School of Journalism:					
Journalism	$ 129,470.07		3,794	$34.12	
Radio & TV	42,452.36		1,102	38.58	
Subtotal	$ 171,922.43	6,324.00	4,896	$35.11	$ 1.29
School of Pharmacy	$ 169,216.92	44,051.21	3,804	$44.48	$11.57
School of Law	252,840.80	49,586.64	7,916	31.94	6.27
Total	$3,855,132.01	$ 497,596.32	203,589	$18.94	$ 2.44

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Fiscal Year 1971-72

DOCTORAL PROGRAM DEPARTMENTS/SCHOOLS

DEPARTMENT/SCHOOL	UM INSTRUCTION & DEPARTMENTAL RESEARCH BUDGET SUPPORT*	OUTSIDE SUPPORT**	FISCAL YEAR STUDENT CREDIT HOURS	UM INSTRUCTION & DEPARTMENTAL RESEARCH BUDGET SUPPORT PER SCH	OUTSIDE SUPPORT PER SCH
Botany	$ 242,607.98 (1)	$ 122,322.11	9,015	$26.91	$13.57
Chemistry	304,926.59	375,132.78	9,979	30.56	37.59
Geology	256,015.53	236,536.29	9,307	27.51	25.41
History	262,017.36	33,532.06	20,941	12.51	1.60
Mathematics	283,746.51	130,076.56	20,035	14.16	6.49
Microbiology	145,211.33	166,305.42	6,086	23.86	27.33
Psychology	308,658.30	172,250.97	19,607	15.74	8.79
Sociology	194,439.15	562,470.77	27,109	7.17	20.75
Zoology	285,987.01 (2)	58,373.50	11,950	23,93	4.88
School of Education	522,952.00	153,295.03	37,628	13.90	4.07
School of Forestry	277,001.99 (3)	192,493.48	11,301	24.51	17.03
Total	$3,083,563.75	$2,202,798.97	182,958	$16.85	$12.04

* Includes only Instruction and Departmental Research Budgets

** Includes all non-general budget dollars available to the academic departments and schools

(1)	Includes:	Botany	$225,899.31
		Bio. Station (50%)	16,708.67
			$242,607.98
(2)	Includes:	Zoology	$269,278.34
		Bio. Station (50%)	16,708.67
			$285,987.01
(3)	Includes:	Forestry	$272,804.55
		Wildlife Management	4,197.44
			$277,001.99

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APPENDIX A-3

UNIVERSITY OF MONTANA

PROCEDURES ON CURRICULUM PROPOSALS

CALENDAR

November 1	10 copies of the proposals should be sent to the Chairman of the Curriculum Committee who will distribute them to the appropriate subcommittees. It is not possible to consider late submissions.
December 21	The subcommittees submit approved changes and reports to the appropriate Dean.
January 4	Amended copies of the proposals and reports from the Deans are forwarded to the Curriculum Committee (15 copies) and the Graduate Council (16 copies) where graduate credit is involved.
March 1	Recommendations of the Graduate Council and the Curriculum Committee are transmitted to the Faculty Senate for action and referral to the Registrar for inclusion in the Bulletin for the next academic year.
June 1	Senate forwards to the President approved new programs for his review and recommendation to the Board of Regents. The Regents at their July meeting will refer the proposals to the Education Committee who will report back to the Regents at the December meeting.

EDITORIAL CHANGES

ONLY the following categories of changes are editorial and require only college or school approval. These changes may be made directly on galley copy submitted to the Registrar and do not have to be considered by the Curriculum Committee.

1. Change of course number with level staying the same.

2. Deletion of unnecessary words.

3. Masthead.

SUBSTANTIVE CURRICULAR CHANGES

Changes that are of a substantive nature require the approval of the Curriculum Committee and the Faculty Senate.

A. The following changes are considered minor and it is the hope of the Curriculum Committee that the subcommittees will provide sufficient review to enable the Curriculum Committee to consider these changes with a minimum of review.

1. Change in course number which changes level of offering in the curriculum (104 to 204, etc.).
2. Change in course title which does not change the nature of the course.
3. Rewriting copy for clarity, but meaning or content not changed.
4. Change in number of credits offered for a course. (Note a justification for the increased load is required.)
5. Changes in prerequisites.
6. Changes in course content, description.
7. Deletion of course from the catalog.
8. Changes in the number of times a course may be repeated.
9. Cross listing a course with another department.

B. The following changes are considered major and will be subject to more intense review by the Curriculum Committee.

10. Addition of a new course to the catalog.
11. Changes in requirements for graduation.
12. New degrees or new programs leading to degrees.

Transmittal Letter

As it is the responsibility of a department to develop its curriculum, it is clear that curriculum changes should have broad departmental support and be approved at a faculty meeting. The transmittal letter should, therefore, contain a statement that the changes proposed were so approved. If courses are submitted which do not have the support of the department, this should be noted in the transmittal letter. (In the past much wasted time was spent by the Curriculum Committee on courses which did not have the support of the faculty. A faculty member, however, retains the right of appeal to the College or School curriculum committee and to the University Curriculum Committee.)

Reports of the Sub-Committees and Deans

The "local" committees shall report their recommendations to the Deans in writing. These reports shall be forwarded to the Curriculum Committee by the Deans along with their recommendations.

Financial Implications of changes

The University is in a tight budget situation so net expansion of programs is out of the question.

New courses will be considered only if one of the following criteria can be met.

1. The new course replaces a currently active course. Although the new course need not have the same number of credits as the course being deleted the net effect of all such changes should not be to increase the number of credits.

2. If a new faculty member is added (not a replacement) a net addition of courses will be considered.

3. If class sizes are reasonable, existing courses may be approved for repeatable credit. It is understood that allowing students to repeat a course where the content varies does not increase the course load of the department. However, documentation must be provided to show that the repeating of a course does not involve an increase in the number of sections.

In general, increased teaching loads will not be accepted as justification for new courses or increasing credit.

APPENDIX A-4

—Montana State University
Bozeman, Montana 59715 Tel. (406) 994-0211

April 2, 1974

PH D PROGRAMS AT MONTANA STATE UNIVERSITY

There appears to be little doubt that the demand for graduate degrees has leveled
and that this condition will continue during the seventies. Therefore, it would
ear logical to make no compromise on admission standards or the standards of aca-
ic performance, using the limited resources available only for students of the
hest calibre. However, such a policy is extremely difficult to sell to the faculty
are anxious to obtain graduate students.

Graduate education is emphasized at a university for the purpose of inducing
earch and other creative activities. There is little doubt that the teaching function
enriched by research activities for both graduate and undergraduate students. Profes-
s actively engaged in exciting research projects tend to introduce some of the exciting
ects of their work into the classroom which frequently results in stimulating lectures
ping the class alive and reducing the possibility of boredom. In addition, a depart-
t heavily engaged in research will have some staff members active on the frontiers of
knowledge and they will bring their students in contact with this exciting informa-
n. A strong research program will attract visitors with great talent who will inter-
directly with both faculty and students through seminars and public lectures. With-
some interaction between the university and researchers outside, the university loses
h of the stimulation characteristic of new learning.

A substantial spinoff for graduate programs in science and engineering is the out-
e funding which allows the purchases of exotic but necessary equipment which could
er be purchased from the capital allowance under present state budget conditions.
s equipment is used by both graduate and undergraduate students and permits them to
ome acquainted with the latest instrumentation. Without such exposure these stu-
ts would not be competitive in todays job market. This is one of the major problems
ing a small institutuion without a major research program in trying to compete in
h cost programs.

Although it is frequently stated that graduate education results in the attraction
better teachers under todays market conditions this is no longer true. At MSU
Modern Languages, Music, and English where the graduate programs were eliminated
en the Applied Science degree was cancelled, we have been able to obtain unusually
ong faculty members without having any graduate work.

It is not correct to assume that all or even most outside grant money obtained by
D granting departments is a result of having that program. For example, in Plant
hology where the department had a moratorium on doctoral students, grant money
tinued to flow in. At the present time this department has seven postdoctoral stu-
ts and even one from Germany. These students asked to work with this department
ause of the international reputation it has. Today's postdoctoral market is such
t substantial research programs can be run without any doctoral students.

my opinion, all doctoral students should first be run through a master's program.
y few baccalaureate holders are ready to plunge into research and creative scholar-
p. They require a period of intensive course study to obtain advanced knowledge

in their field. In addition, they need experience in research design. Furthermore, they do not know if they are cut out for doctoral research. All of these factors would be covered by a master's degree and, should the student discover that this was not his forte, it would be less traumatic for him to leave the university with a master's degree, than being told he was unsatisfactory Ph D material and dropped abruptly.

One problem facing every graduate dean is how many students are necessary for a viable program. If the Ph D department demands all of its candidates go through a master's program, it will certainly substantially increase the number of students in certain core courses so that they will be above minimum size. However, for doctoral seminars, comprehensives and research, it is necessary to have some minimum number of students. These students learn from each other, the more advanced teach the techniques necessary in the discipline to those with less experience, they discuss new research in the area, test questions, etc. It is very difficult for me to see how an effective doctoral program can be operated with one or two students. However, one fact should be kept in mind - that student numbers should be examined over a period of several years as it is possible to graduate a number of students at one time which might reduce the student level to an unusually low number for one year, and it could be built up to a satisfactory level the next year.

There is no question in my mind that we should have a continuing evaluation of all graduate programs. I feel that it is very difficult to do this internally as no one wants to recommend the elimination of some other department's program. An extensive review was made last year by the Executive Board of the Graduate Faculty of all programs at MSU. These were rated numerically on the basis of academic merit. However, there was great reluctance to recommend any drastic elimination of programs or any changes in emphasis. A tremendous amount of effort was expended and I feel the results (partly the use that was made of the report) did not justify the time consumed. It would appear that the University of Utah system would be more satisfactory for reviewing graduate programs. I believe we must recognize our financial situation dictates that we cannot offer all the programs that either the faculty or students want and some satisfactory procedure must be developed to determine the direction of graduate education in the University System.

INDIVIDUAL PH D PROGRAMS AT MSU - on following pages.

INDIVIDUAL PH D PROGRAMS AT MSU

Agricultural Economics

Strong emphasis is placed on applied agricultural problems which will have direct impact on our region and state. Increased emphasis will be placed on research in the areas of land use, natural resource economics, and international trade in agricultural products. Current emphasis on energy research is expected to continue for four to five years. Most of the funding is from the Agricultural Experiment Station, although some funding has beem obtained from the National Science Foundation, U. S. Forest Service, and the Office of Water Resources Research.

In addition to Federal positions and positions in private industry, 10 of the previous holders of the Ph D from this department are employed in universities or colleges, one of whom is at the University of Montana and another at Eastern Montana College.

In the past several years the department has been very selective on candidates for the Ph D.

Botany

The research and graduate teaching programs in botany are limited to specialized areas and the only students accepted are those in which the department feels it can produce a competitive Ph D. This accounts for the small number of students. The research direction is in aquatic and terrestrial plant ecology.

Although only four Ph Ds have been produced in botany in the last five years, three are in Montana, the fourth is a professor at Eastern Washington College at Cheney.

Department of Chemical Engineering

The doctoral research effort in Chemical Engineering is primarily funded by outside grants and therefore directed toward very specific projects.

Better heat transfer is a major developmental problem in nuclear energy. National Science Foundation has funded a grant to study the use of agitated particles as a more efficient way to transfer heat.

Oxides of nitrogen constitute a major portion of air pollution, especially from combustion engines. Substantial work is in progress investigating the use of metal sulfides as catalysts to remove these compounds.

Magnetohydrodynamics (MHD) is a more efficient way to generate electric power. A project funded by AVCO is under way to convert Montana coal into liquid fuel suitable for a MHD burner. Another coal project is funded by the Burlington Northern to investigate the pumping characteristics of coal-oil slurries as a more efficient way of transporting coal.

A study of a better means of separation of ethyl benzene from close boiling impurities is being funded by the synthetic rubber industries since this is an important ingredient of synthetic rubber.

NIH has continued to fund a study on the flow and physical properties of human blood since this information is necessary before artificial human organs can be designed.

Of the 14 Ph D candidates graduated in the last five years, two are working in Montana; one is a professor at the University of North Dakota, one a professor at Washington State University, and with the exception of one in Taiwan, the others are in industrial positions scattered around the United States.

Department of Chemistry and Biochemistry

Students in these two degree programs take many of the same courses and the same comprehensive examinations. They are only differentiated after they are in their final year or two. Therefore, although the number taking the biochemistry route has been small, it is not a completely different program, a fact which should be kept in mind when evaluating the cost.

The research in this department is concerned with a broad spectrum of problems ranging from the very practical to highly abstract. This is the largest Ph D program at Montana State University, and to list the direction of all research would make a report in itself. In the last few years, the department has been tackling a larger number of problems of immediate concern to society. Examples of these are: modes of degradation and identification of pesticides and related chemicals in the environment, correlation of plant cuticular lipids with pesticide application, identification of toxic constituents of plants native to Montana which cause livestock fatalities, insect pheromone synthesis which could lead to a method of controlling the pine bark beetle, studies on plant toxins in regard to effects on the metabolism and mode of action in animals, development of special furnaces for atomic absorption which results in more sensitive determination of metals (this instrument is very useful to study cloud seeding), effect of sunlight on cloud seeding particles, diffusion of ions from soil into plants. In addition, a number of theoretical studies are in progress on molecular structure, reaction kinetics, reaction mechanics and synthesis of both organic and unusual inorganic molecules.

Of the 31 Ph D's graduated since 1969, four are located in Montana and the balance are scattered over the United States with one in Canada, and one in Iran. Seventeen are located in universities, the balance are in industrial work.

Civil Engineering and Engineering Mechanics

Due to limited personnel and a large master's program this department has confined the Ph D work to the areas of environmental engineering, fluid mechanics, hydraulics and structural mechanics. The master's program maintains a student population which assures that graduate courses in the above areas are well attended. Until such time as student demand in other areas results in a strong core program in a specialty, no expansion in the Ph D program is anticipated.

Of the 7 Ph D's graduated in the last five years, two are employed by universities and one is working for a consulting firm in Montana.

Crop and Soil Science

The research effort of this department can be divided into two general areas as indicated by the departmental name, namely, plant science and soil science.

In the plant work the following areas are observed:

1. Biosystematics - wheat grass and wheat.
2. Crop Physiology - winter hardiness, growth energetics and plant architecture.
3. Plant Breeding and Plant Genetics - barley grass, legumes and wheat.
4. Seed Production and Physiology.
5. Weed Science - herbicides, biological weed control and weed ecology.
6. Cereal Chemistry - where protein, starch and lipids along with physical properties are determined to see if a newly developed variety is economically sound (for example, baking tests on new wheat varieties).

In the research on soils the following areas are covered:

1. Clay Mineralogy - structure and soil properties.
2. Soil Physics - water movement, plant water use and energy budgets.
3. Soil Fertility and Soil Chemistry - plant nutrition.
4. Soil Genesis, Morphology and Classification.
5. Climatology - agricultural and microclimatology.

Of the 19 Ph Ds graduated, 7 are employed by universities. Presently four are working in Montana.

Electrical Engineering

In the area of digital systems and computer research, the effort lies in the designing of cells which will perform arithmetic, logic or routing operations.

Research in the area of electromagnetic field application has been directed toward the development of an instrument for measuring the moisture content of live foliage, the development of analytical methods for predicting radiated field patterns of certain types of transmitting and receiving antennas and in the development of an improved method of generating precise microwave signals.

A third general area is in developing methods to obtain the best possible automatic control of a given physical process.

Research in communications is the original research area of this department. These studies range widely across such areas as radio propagation, communication systems synthesis, precision timing and frequency generation and analysis of speech communication.

Electrical Engineering (continued)

Research in the area of solid-state has been fundamental in nature, dealing with either magnetic materials or semiconductors. This may lead to new or improved transistors, temperature sensors, switching devices, and memories.

Of the 23 Ph Ds graduated during the last five years, four have university positions, one in Montana, and the others are working for government or industrial concerns.

Over the years, this department is one of the highest producers of Ph Ds at Montana State University.

Entomology

Although at present the programs in insect ecology and insect development are rather limited, the work on insect development is outstanding and recognized internationally. Since there appears to be a lack of student interest in the master's program, which would lead to low enrollment classes, there is a temporary ban on acceptance of new students in the Ph D program. There is some hope that the interest in methods of control of insects without using chemical pesticides will lead to an increase in students desiring training in entomology.

One of the problems in the past has been that students working in this area preferred a degree in zoology over one in entomology as they considered it more beneficial when looking for a position.

The four students graduated from this department in the last five years are all working in Montana.

Fish & Wildlife Management

The doctoral program in fish and wildlife management is rarely used but it is based on one of the strongest master's programs in the University. The areas of strength are big game management, bird management, fishery management and habitat management.

Only two candidates have graduated from this area in the last five years. One is located in Montana and the other is in the Peace Corps.

Genetics

The genetics program is administered by an interdepartmental Institute of Genetics. Genetics is a pivotal discipline relating to all other areas of biology (agriculture, medical science, microbiology, wildlife management, and biochemistry), and a strong emphasis is crucial to a school with a mission such as ours. Prior to the authorization of a degree in Crop and Soil Science, many plant breeders received their degree in this area which accounts for a lower degree production in recent years.

Of the nine candidates awarded degrees in the last five years, three are in universities and one is employed in Montana. The others are working in industry.

Mathematics

Presently the trend of mathematical research is in applied mathematics and statistics along with those basic areas of pure mathematics which support this emphasis. More specifically several staff members are presently conducting research related to mathematical and statistical models that describe physical phenomena in such fields as agriculture, biological and social sciences, economics, engineering and physics. Current research includes the following items:

1. Stability of population models with time delay.
2. Numerical techniques in mathematical modeling.
3. Methods of analysis suitable for data on new born calves.
4. Methods of analysis suitable for data on mature lodgepole pine tree size.
5. Methods of analysis of data concerning effectiveness of medication and relationships between diet and health.
6. Design and analysis of experiments suitable for evaluating operation of coal gasification plants.
7. Evaluation of various feed supplements.

Of the 11 Ph Ds graduated in the last five years, nine have positions in colleges or universities; however, none are in Montana.

Mechanical Engineering

Mechanical engineering is one of our most recent Ph D granting departments. However, in personnel it is very strong. This department has restricted areas of Ph D work to those which can be handled by current staff. The areas are fluid flow, heat transfer and bioengineering where material property characteristics are used to establish the health state of an individual.

The work on fluid flow has been in rough pipes and is concerned with the effect of roughness on heating. This work is financed by the Atomic Energy Commission.

The heat transfer work is concerned with the determination of natural convection characteristics in a closed space. The practical aspects of this work is that it will allow one to determine the characteristics of airflow in a room with persons in that room and thus optimize the comfort of persons in that room while minimizing the energy input to the house.

The project in bioengineering has potential application in determining the rate of healing of persons who have broken bones. It also has the potential to determine the state of osteoporosis in an individual and may be able to measure changes in properties of both bone and flesh when certain kinds of medication are given.

Three of the four graduates in the past five years are employed by universities and the fourth is in the Argon Laboratories. Two are presently in Montana.

Microbiology

The research program in microbiology will continue to emphasize medical research and at the same time attempt to expand the program in environmental microbiology. Research at the present time involves studies on the biology of cancer, immune responses to cancer, and organ grafts, viruses, bacteria, fungi, and parasitic animals along with the role of different immune factors in these responses.

The research program in environmental microbiology will involve ecologically oriented research particularly as it relates to Montana's environment. Research on water quality and environmental contamination by man and animals will be emphasized.

Of the 10 Ph Ds graduating in the last five years, six are employed by universities or colleges and one is employed in Montana.

Physics

The department of Physics contains one of our strongest graduate faculties. The department has Van de Graaff accelerators which are to be used to study the following problems:

1. Simulation of radiation damage in fast breeder or fusion reactors.
2. Hydrogen storage in metals, and metal hydrides.
3. Ion-implanted compound semiconductors to be used for efficient solar energy converters and the effects of impurities on material behavior.
4. Corrosion problems arising in the transportation and storage of energy.

The photoemission laboratory of Professor Lapeyre is involved in basic research in the electronic properties of materials as well as investigating the surface properties of solids which are so important in energy generation. Corrosion, oxidation and other degradations of the chemical, mechanical, thermal, and optical properties of surfaces are problems because of the severe environment to which these surfaces are exposed during energy generation or transportation. Photoemission is a useful technique for studying these problems.

An investigation is underway to study ion-implanted materials whose purpose is to find the atomic sites where these ions are located and what the mechanism and rates of their diffusion are. Ion implantation is a method of producing low cost solar cells. It is also a potential means of passivating surfaces used in fission and fusion reactors which may alleviate problems now encountered due to materials failure.

Studies are underway in both solar energy and wind energy.

Of the eleven Ph Ds produced in the last five years, seven have teaching positions in colleges and universities, three are in government service and one has an industrial research position. None are located in Montana.

Plant Pathology

Plant pathology is a small department staffed with young, vigorous researchers having both national and international stature. Evidence of this is the fact that the department always has a number of postdoctoral fellows anxious to work with them. This year they even had one from Germany.

The research is problem oriented and includes both basic and applied aspects of plant diseases.

Typical projects are as follows:

1. Soil-borne diseases of field crops - emphasis on the use of cultural practices and/or resistance for control.
2. Leaf spots of cereals - emphasis on determining the complex of fungi involved and on breeding disease resistance.
3. Alternaria leaf spot of safflower - detecting and incorporating disease resistance.
4. Genetics basis for resistance of cereals to rust diseases - determination of best methods for incorporating long-lasting resistance into wheat and barley varieties.
5. Biochemical nature of disease resistance - mechanisms and effects of toxins developed by plant disease organisms. Methods are being developed for rapid evaluation of disease resistance by use of purified toxins instead of the plant pathogens.
6. Virus diseases of cereals and potatoes. Use of serology for detection in certified seed and studies on cytological basis for seed transmission of barley stripe mosaic virus with the goal of developing resistant varieties.
7. A study of life cycle and epidemiology of ergot aimed to discover factors which should contribute to its control.

In the past some plant pathology students received degrees in botany so department lists 7 students in the past five years receiving Ph Ds. Five of the seven are located in universities, one is employed by the USDA and the other by the California Department of Agriculture. None are in Montana.

Veterinary Science

The doctoral program in veterinary science was designed to increase the research competence of practicing DVMs. Since these people are already well established, it takes a substantial grant to induce them to leave their practice and continue their education. The low enrollment in this area is not due to lack of interest but to lack of adequate funding.

This department conducts basic and applied research in the fields of bacteriology, biochemistry, parasitology, and virology. In addition, students in the program will receive training in the related areas of pathology, physiology and clinical veterinary medicine.

Although there are students presently working in this department, it has no Ph. D graduates as of this date.

Zoology

The Ph D program in zoology is directed toward aquatic and terrestrial animal ecology. In the past a sizeable number of people had research problems related to fish under Dr. Brown. However, they requested their degrees in zoology instead of in fish and wildlife management. We also find people who were working on problems in entomology chose to obtain their degrees in zoology rather than in entomology. Since two-thirds of the degrees awarded in this department fall into the above classes, the discussion of where the Ph Ds have located probably does not give an accurate description of the department. Of the total of 13 completing the degree in the last five years, ten of them are associated with universities or colleges and three of them are employed in Montana.

The following summary of doctoral departments includes money from outside sources for the last year. Since we have had a reorganization of departments it has created a problem in that data available does not break out either funding or teaching loads by the new system. For this reason, a separate list of outside funding expended by departments during the last fiscal year has been included.

Substantial new grants have been obtained, part of which is being expended this fiscal year. Some of these are as follows:

1.	Crop and Soil Science	$150,000
2.	Fish and Wildlife	82,481 and $17,710
3.	Physics	60,000

There are numerous small ones in the $1000-$5000 range.

FISCAL YEAR 1972-73
MSU DOCTORAL PROGRAM DEPARTMENTS

	Instruction & Departmental Research Expenditures	Student Credit Hours Produced	Weighted Student Cr. Hrs. Produced	Expenditure per SCH	Expenditure per WSCH	Outside *** Support
AGRICULTURE						
Ag Econ & Econ	217,506.72	12,122	16,336	17.94	13.31	15,047
Plant & Soil Sci.	131,579.92	6,312	10,456	20.85	12.59	76,570
Veterinary Sci.	24,084.28	715	1,514	33.68	15.91	-0-
EDUCATION						
Educ. Services	104,588.40	3,526	12,028	29.66	8.70	
Elem. Educ.	150,389.12	7,189	15,724	20.92	9.56	
Sec. Educ.	244,348.63	10,177	21,032	24.01	11.62	
ENGINEERING						
Chem. Engineering	180,636.58	3,752	8,478	48.14	21.28	89,313
Civil Engr. & EM	302,224.23	6,004	11,765	50.34	25.69	291,945
Elec. Engineering	254,640.76	4,514	9,713	56.41	26.21	112,383
Mech. Engineering	207,074.47	6,393	11,662	32.29	17.75	72,240
LETTERS & SCIENCE						
Botany & Micro. *	380,972.95	19,440	27,403	19.60	13.90	-0-
Botany						53,170
Microbiology						64,127
Plant Pathology						163,112
Chemistry	453,150.46	20,314	27,028	22.31	16.77	169,161
Mathematics	530,391.88	26,394	30,668	20.10	17.29	-0-
Physics	298,676.44	10,754	13,869	27.77	21.54	131,991
Zoology & Entomology **	251,524.49	14,735	21,545	17.07	11.67	-0-
Fish & Wildlife Mgt.						25,888
Genetics						-0-

* Includes Plant Pathology in state funding

** Includes Fish & Wildlife Management in state funding

*** Sometimes there is slight overlapping of years since grants do not always start on July 1 as do state appropriations.

MASTER'S PROGRAMS AT MONTANA STATE UNIVERSITY

Most of the preface to Ph D programs at Montana State University applies to master's programs. We believe that the master's degree should be an intermediate step between the Bachelor's degree and admission to a Ph D program. Admissions standards should be strengthened, not relaxed, at a time when the job market is poor, even though graduate programs depend on a certain minimum number of students to make the program viable. As with the Ph D programs, master's programs should receive continuous, rigorous internal and external review. Internal reviews are important and worthwhile but it is believed that seldom are the final recommendations taken as seriously as are recomendations from outside consultants or review agencies. We recommend graduate program reviews at all levels at all units of the University System by subject area specialists from outside the State of Montana. Expenditures related to credit production for master's, and non-graduate degree granting departments indicated for 1972-73 in tables at the end of this section.

STATEMENTS RELATED TO MASTER'S PROGRAMS BY DEPARTMENT

COLLEGE OF AGRICULTURE

Agricultural Economics

The department of Agricultural Economics and Economics offers a Master of Science degree in Agricultural Economics. The department's main objective is to train agricultural economists to more adequately analyze and improve the production and marketing situation of Montana's livestock and grain producers. The number of students graduated each year at the masters level has been about six. The department is attempting to increase the size and flexibility of the master's program at the same time improvements in quality are implemented. A request from the department to change the name of the degree of Master of Science in Agricultural Economics to the Master of Science in Applied Economics is being reviewed by appropriate bodies within the University.

Agricultural Education

The Master of Science in Agricultural Education is related mostly to the needs of the returning vocational agriculture teachers and Extension personnel. The program seems to hold quite steadily to a production of about six students per year. Due to the limited number of vocational agriculture teachers and Extension personnel in the State, the graduation rate is expected to remain relatively constant. The department is currently reviewing the need for and feasibility of requesting a Master of Science degree program in Industrial Arts within the next three years.

Animal and Range Science

The department of Animal and Range Sciences offers the degree of Master of Science in Animal Science and Master of Science in Range Management. The primary goal of the graduate program is to provide students the opportunity to achieve a Master of Science degree. This allows students to specialize in

Animal and Range Science (continued)

any of the animal science fields (breeding and genetics, nutrition, physiology and endocrinology or general Animal Science). The emphasis in Range Management graduate student training is in range improvement (including disturbed site reclamation), ecology, grazing management and measurements. Degrees in all areas emphasize the basic sciences (particularly Chemistry, Biology and Mathematics) as a basis for the graduate programs. The students are prepared for jobs in the industry, public service, extension and teaching or for continuing their education at the Ph D level. A secondary goal of the graduate program is enhancement of the research effort of the department.

The production of Master of Science recipients in Range Management has been one or two per year, except it increased in 1973 to 4; in Animal Science about 6 per year is average. The number of Animal Science graduates is expected to remain about the same while the number of range students is increasing. The department is considering the submission of a proposal to change the title of the Master of Science in Range Management to Master of Science in Range Science. This would be more in line with current national trends and may be of assistance in recruiting students.

Plant and Soil Science

Master's degrees are awarded in Agronomy and in Soils. In agronomy, approximately 4 master's degrees are awarded each year; in soils, about 2.

For several years students pursuing graduate work in the area of recreation resource management and site inventory analysis have been awarded Master of Science degrees in either Agronomy or Soils. Sentiments of faculty, students, and employers are that a degree with a title more indicative of student specialization is desirable. For that reason, a request for a new degree entitled Master of Science in Recreation Resource Management, which was tabled by the Executive Board of the Graduate Faculty in the spring of 1973 (a moratorium was declared on all new degree considerations because of budget concerns), will be renewed this academic year.

Plant Pathology

The Department of Plant Pathology is not currently authorized to offer a master's degree, only the Ph D. A proposal to offer such a degree is scheduled for discussion by the Executive Board of the Graduate Faculty during Spring quarter 1974.

Plant pathological research has been conducted at the Master of Science level for years by the Department of Botany and Microbiology. However, since no attempt was made to differentiate between areas of botany, it is impossible to make an exact count of students who have been graduated with a major emphasis in plant pathology. In 1973, Plant Pathology became a separate department with a current staff of eight professional members specializing in many areas including soil-borne diseases, leaf spot diseases, cereal rusts, virology, nematology, bacterial diseases, biochemical nature of disease resistance, genetics of disease resistance, extension plant pathology and electron microscopy. Problem oriented research is centered on the major plant pathological problems in the State. In addition to the regular staff, there are seven postdoctoral students and five

Plant Pathology (continued)

research associates in the department. An adequate capability exists for the academic and research program required for supporting a master's degree because it has already been declared capable of supporting the Ph D offering.

Veterinary Science

The goal of the department of Veterinary Science is to offer academic and research training for persons seeking occupation opportunities in the diverse areas of veterinary science and veterinary medicine. The students may major in bacteriology, parasitology, biochemistry or virology. Minors may be selected from within the department in either pathology or physiology, or from a related field in any of the basic science departments on the campus.

The department will give primary emphasis to those students seeking the Master of Science degree but to date economic factors have prevented the offering of adequate stipends to attract students. The department will also continue to encourage students, who are interested in the various research programs within the department, to matriculate in the graduate programs in the health related academic departments such as Biology, Microbiology, Chemistry, Plant Pathology and Animal and Range Sciences, but to consider conducting their research at the Veterinary Research Laboratory. Most of the interest since the inception of the program in 1970 has been from persons with the DVM degree who would like additional research training.

Because of the economic and student interest situations, no masters degrees have been awarded to this date.

COLLEGE OF ENGINEERING

Agricultural Engineering

A Master of Science degree in agricultural engineering is offered by the department of Agricultural Engineering. Major study may be in irrigation, drainage, conservation, farm power, farm machinery or agricultural structures and related problems. This program makes broad usage of related departmental course offerings.

Between 1970 and 1973 this department graduated 6 students with master's degrees. Enrollments have remained small but constant and production in the next few years is expected to be about the same, 2 or 3 a year.

Chemical Engineering

For regular admission to this highly specialized master's degree program a bachelor's degree in chemical engineering is required. The standards are exceedingly high, graduates are well qualified and find positions readily. Current research projects of an applied nature include studies on coal liquification, fluidized bed heat transfer from finned tubes, extractive distillation and removal of SO_2 and NO_x from combusion gases. Topics of a more theoretical nature are high mass transfer studies, flow of blood through capillaries, evaluations of static mixers and development of membrane processes.

Chemical Engineering (continued)

The professional staff is highly qualified as evidenced by the ready acceptance of both masters and doctoral graduates by universities and industrial firms. Research at the master's level, as with doctoral, is financed largely by outside grants. Much of it is applied research directed toward the problems of the State.

The granting of master's degree has ranged from 2 to 12 during the years 1966 through 1973, with an average production of about 7. Present enrollment and applications tend to indicate a stable program.

Civil Engineering and Engineering Mechanics

This department offers the Master of Science degree in Civil Engineering. In May 1970 the Civil Engineering and Engineering Mechanics department identified several areas in which definite goals were listed: (1) development of areas of "excellence" in transportation, planning, and environmental engineering, while not sacrificing the existing areas of excellence in the department; (2) a full program in continuing education as a means of serving the Montana engineering community; and (3) the expansion of the present research program to provide a better balanced program linking basic engineering theory more closely to applied engineering objectives.

These objectives have, with some modification, remained intact. The past year has seen what appears to be a new interest by students in pursuing a graduate career, and we expect that enrollments will continue to increase in the coming years. Commensurate with this new interest, we still intend to establish a stable graduate program with approximately fifty students at the master's level. This level would be: (a) the numbers sufficient to develop the areas of excellence mentioned above, and (b) meet the expected placement demand at the advanced degree level in civil engineering. Presently the major obstace to establishing this graduate enrollment is the level of funding support from the university, and as a consequence, the graduate program growth is directly dependent on the extent to which the research program in the department is developed. Consequently, these two objectives must be developed together, as one depends upon the other.

The Civil Engineering and Engineering Mechanics department plans to continue expanding its continuing education program. The response to the program in Helena has been excellent and there has been a growing interest in the program in Billings. We soon expect to begin offering graduate level courses in Billings as well as in Helena. Additionally, the department has had excellent response to the conference and workshops it has offered over the past three years. This program will be continued at its present level and possibly increased commensurate with demand.

Forty Master of Science degrees have been awarded over the past three years. A significant increase in enrollment during the current year and applicants for next year indicate significant growth of this program.

Electrical Engineering

The goals of the Electrical Engineering department at the graduate instructional level are primarily fourfold: (1) To maintain a level of graduate student enrollment which will permit continued efficient use of our staff and facilities. (2) To maintain our level of excellence in the areas of automatic control systems, communication systems, electronic circuits, digital circuits, computer engineering, and electromagnetics. (3) To improve our capabilities and keep abreast of

Electrical Engineering (continued)

advancements in the two newer areas of solid-state device fabrication and microelectronics. (4) To maintain or increase the level of government and industry sponsored research and development work which provides an environment important to the training of engineering graduate students, funding for student support through graduate assistantships, and an opportunity for the staff to conduct stimulating research.

The Goals Committee of the American Society of Engineering Education undertook an extensive study of engineering education a few years ago and one of their major conclusions underscored the importance of the Master of Science degree. They recommended that the MS degree be regarded as the first professional degree. While this recommendation has not received unanimous support from engineering educators, it nevertheless suggests the important role which the MS degree plays in engineering education. Consequently, this department will continue to emphasize the MS degree although superior students, desiring to enter teaching and research. will be encouraged to pursue the Ph D degree.

The department does not plan a change in emphasis of its program during the next several years.

Four to six master's degrees have been awarded each year recently. Enrollment is up somewhat at present but financial constraints will tend to hold the production level about as in the recent past.

Industrial Engineering and Computer Science

The Master of Science degree in Industrial and Management Engineering is offered by this department. Areas in which the student may specialize include computer science, operations research, engineering economy, facilities design, work design, production control, quality control and production management.

The departmental goals are to improve and strengthen the present program rather than to make drastic changes. The present program is well balanced and flexible enough to meet the needs of students.

Since 1970, 26 students have been graduated with master's degrees in Industrial and Management Engineering. The present enrollment and application trends indicate about the same level of 6 to 10 graduates a year.

Mechanical Engineering

The goal of the M.S. program in Mechanical Engineering is to prepare students to analyze and solve complex engineering problems which an undergraduate is not immediately capable of doing. The student is prepared to assume a position, upon receipt of the degree, which is at a more advanced level of responsibility than positions in which B.S. graduates are placed.

The program of courses taken by the students is generally broad, and students are discouraged from over-specializing at the Master's level. This is not meant to imply that some concentration in a particular area of mechanical engineering is not allowed; in fact, students must obtain a concentration in one of the following areas: Thermal Sciences, Materials, Fluid Mechanics, or Mechanical Design.

Mechanical Engineering (continued)

Also, students must normally take advanced courses in each of these areas. Exceptions are made for those students interested in areas such as bio-engineering, environmental engineering, etc.

The offering of the master's degree in Mechanical Engineering is consistent with the goals and objectives of the University. Research is a major function of the University, and many of the master's degree students in this department are actively engaged in the research efforts of the faculty. It has been our policy to use MS degree students, in addition to Ph D degree students, on research projects whenever possible.

The department of Mechanical Engineering has graduated 22 students with master's degrees the past three years. With an enrollment of 9 students Autumn 1973, the number of graduates is expected to remain about the same in the near future.

COLLEGE OF PROFESSIONAL SCHOOLS

School of Art

The School of Art offers a Master of Arts (M.A.) degree and a Master of Applied Arts (M.A.A.) degree. The M.A. degree requires 45 hours of course work and a professional paper and can usually be completed in three or four quarters. It is intended for the high school teacher of art. The M.A.A. degree requires 45 hours of course work and a thesis, written or studio. The M.A.A. usually takes at least two years to complete and is designed for the professional artist, designer and those who plan to teach art on the college level.

As completion of the new Creative Arts Complex draws near, the School of Art looks forward to better facilities. This should improve and enlarge their graduate program. Some goals stated by the faculty are to increase the graduate enrollment by more active recruiting both in-state and out-of-state, develop more course offerings in the history of art and in professional design, strengthen the graduate offering by separating graduate and undergraduate class and studio space, and request a change of title of the Master of Applied Arts to Master of Fine Arts.

Since the degree of Master of Arts in Art is a newly authorized degree, no students had graduated as of the end of the academic year 1973. During the past three years, a total of 16 students have been granted the degree of Master of Applied Art. There were 13 students enrolled in the program autumn 1973. That fact plus a stable application situation indicates a fairly constant but possibly growing program. When the attraction of the new facility is added, it is possible to envision a 50% growth in the graduate program in the next two or three years.

School of Commerce

The School of Commerce offers the Master of Science in Business Education with special emphasis in distributive education or office education. Course work may include the professional qualifications for certification as vocational coordinators of office or distributive education programs on the high school or postsecondary level. Course work in accounting, computer application, marketing, management and finance may be included.

The School offers the only master's degree in business education in the State and draws teachers from surrounding states as well. Demand for the graduates has been very high recently and a large percentage are placed in or return to teaching positions in Montana.

The graduate program in business education has been on the upswing during the past three years, with 6, 12, and 15 students being graduated each year respectively. This growth pattern may continue slightly but by conservative estimates it will probably remain at a graduation level of 12 to 16 per year.

School of Home Economics

The Master of Science in Home Economics degree is granted with specializations in child development, consumer education, family life, food and nutrition, and home economics education. Research is required in all areas of specialization and only the thesis plan program is currently in use. Most of the research is applied to finding ways to improve the quality of living for Montana's people through improvement of health, education, and the environment. Specifically, in nutrition, basic research is being done involving the basic nutrient zinc and its relationship to proteins in the diet. Data on the life-styles of Montanans is gathered to gain a better understanding of the kind of people who choose to live in Montana. Attention to consumerism is a third facet of the research effort in home economics.

During the last seven years a total of 48 students have received the Master of Science degree in Home Economics; 23 of these having been awarded during the last three years. It is expected that the average graduation rate of 7 students per year will be maintained.

Department of Music

No graduate degrees are offered at this time by the department of Music. However, the department is preparing a proposal to secure approval to grant the degree of Master of Music Education. It is expected that this proposal will be discussed within the University within the next academic year. The move to the new Creative Arts Complex will provide the faculty with the long awaited opportunity to teach in an adequate setting and to try to attract some musicians to graduate school, primarily to increase the level of their teaching skills.

The Department of Music offered a graduate program through the Master of Science in Applied Science until the termination of that program. Graduates from that program during the years 1970-73 totaled 13. It is anticipated that if the department is authorized the Master of Music Education degree, the interest and participation would be significantly higher than when the MSAS was available.

School of Nursing

The Master of Nursing degree is granted. The objectives of the program are: (1) To assume responsibility for studying contemporary problems and applying current theories in nursing practice. (2) To further develop competencies in the nursing care of patients. (3) To prepare for leadership roles in nursing. (4) To prepare for teaching in nursing. (5) To prepare for administration of nursing. (6) To prepare for the role of a clinical specialist in one selected area of nursing.

Two programs are offered, each leading to the Master of Nursing degree: (1) the Clinical Nurse Specialist in which the area of concentration is clinical nursing. Graduates of this program will limit their study to one aspect of nursing in which considerable expertise is developed; (2) the major area of concentration is preparation for beginning teaching or administration. Advanced clinical nursing preparation is included as an integral part of this program. Clinical specialization is offered in five areas of nursing: (1) Cardiac and Respiratory, (2) Chronic Illness and Rehabilitation, (3) Pediatrics, (4) Public Health, and (5) Psychiatric. The clinical specialization offered is limited to the available faculty, resources and facilities.

During the past seven years, a total of 81 nurses have been granted the Master of Nursing degree; 40 of those within the past three years. The enrollment and application trends indicate a stable enrollment and graduation rate for the next few years but this could be adversely affected by the recent apparent reduction of health related grants and traineeship funding at the Federal level. The new Nursing Building on the MSU campus has added to the morale of the faculty and students and makes it easier to recruit students.

OLLEGE OF LETTERS AND SCIENCE

Department of Biology

This department offers Master of Science degrees in Botany, Entomology, Fish nd Wildlife Management, and Zoology.

Research in botany includes projects in limnology, ecology, physiology and axonomy. The major emphasis at the master's level will remain in terrestrial and quatic ecology.

Research in entomology includes projects in ecology, genetics and embryology. n fish and wildlife management, projects are in fisheries, big game, game bird nd habitat management. Zoology research is in terrestrial and aquatic ecology and n genetics.

During the period 1970-1973, 14 master's degrees in botany, 3 in entomology, 3 in fish and wildlife management, and 12 in zoology have been granted. Financial upport from outside agencies is strong for master's programs in botany, fish and ildlife management and in zoology. This department turns away large numbers of

Department of Biology (continued)

graduate student applicants of high quality because of lack of staff to advise them. The programs in fish and wildlife and zoology could be doubled or tripled by increasing staff but the placement of these graduates would be difficult. Therefore, the department will probably choose to retain a stable, moderate enrollment which can be strongly advised and placed upon graduation.

Department of Chemistry

The Department of Chemistry offers the Master of Science degree in Chemistry. The departmental staff is concerned with the development of a strong interdisciplinary program which will meet the needs of students interested in biochemistry and the biological sciences beyond the BS level, and which will lead to an MS degree more appropriate than the discontinued MSAS degree or the MS plan B degrees now being used for this purpose by various departments including Chemistry. There have always been a number of students in this category interested in graduate work at MSU who have done outstanding work leading either to further education at professional schools (medicine, dentistry, veterinary science, etc.) or to positions in teaching or at various points in the broad health related field.

The present MS in Chemistry is primarily directed toward preparing the student for either an industrial position or for entry into the PhD program.

A total of 13 MS degrees and one MSAS degree have been awarded during the past three years. The enrollment at the master's level and the graduation rate is expected to remain relatively constant.

Department of Earth Sciences

This department will continue to offer the MS in Earth Sciences in its three major disciplinary areas--Geography, Geology, and Meteorology. Degree emphasis in all three areas will continue to include significant interdisciplinary aspects, interracting with courses, staff, and graduate students from other related departments.

We have temporarily (and voluntarily) shelved the Meteorology graduate program until staffing support is more clearly defined. We fully expect to reopen this area during the next three year period.

The immediate surroundings of Bozeman are excellent in their variety of geographical, geological, and meteorological opportunities for field experience. This is a factor of considerable importance in the development of a sound practical education to blend with classroom and laboratory in the training so essential to people entering these areas of emphasis.

In order to fully capitalize on this opportunity, to fully exploit the professional capabilities of existing staff, and to effectively attract qualified students and guide them into the important challenges of the day, the Department

Department of Earth Sciences (continued)

of Earth Sciences offers the Master of Science in Earth Sciences, wherein the major emphasis is on educating and training students to help solve environmental problems and to better utilize and conserve our natural resources.

During the academic years 1970 through 1973 the Department of Earth Sciences graduated 23 students with the degree of Master of Science in Earth Sciences and one student with the degree of MSAS.

Department of English and Theatre Arts

This department is not currently authorized a master's degree program. Until the Master of Science in Applied Science degree was terminated, this route was used for graduate education. During the period 1970-1973, 8 students received the MSAS degree. The department is currently preparing a proposal for a Master of Arts degree in English with a teaching option. This program is being developed in response to a need for post-baccalaureate study in English for Montana teachers of Secondary English. As Secondary English programs around the State are being upgraded, and as the Montana Association of Teachers of English and the State Supervisor seek to implement NCTE Guidelines for the Preparation of Teachers of English, our department has thoroughly investigated both program needs and the level of demand for a graduate degree program aimed primarily at teachers in service.

The goal of our proposed program is the improvement of Secondary English subject preparation and teaching effectiveness, so that Montana high school graduates can be better prepared for careers and for higher education. Our statewide survey reveals that a majority of English teachers in service feel that they have been thinly prepared in aspects of literature, language, and composition which bear upon their immediate needs as teachers. A secondary goal of our proposed program is to improve the graduate-level course offering in Humanities for graduate students enrolled in related degree programs, e.g., in History. Our department through staff changes is now in a position to make a higher level contribution to advanced study and training in English, and members of the department are already very active in the statewide development effort.

Assuming that the present level of funding for our department will remain essentially the same, we estimate that the proposed program would be largely self-supporting, since it would be run mainly in the summer and since we would not be using the program as a means of acquiring GTAs to teach our introductory courses. During summer quarters the anticipated enrollment in this MA program will be from 30 to 35 students.

Department of History, Government and Philosophy

The Master of Arts in History is offered by this department. The areas of concentration are in Recent America, Regional History, The North American Indian, and the History of Science.

Department of History, Government and Philosophy (continued)

Departmental plans are to continue the same general areas of emphasis with some growth and strengthening of the program through recruitment and course adjustment. The MA degree was first awarded at MSU in 1970 with 7 students having received the degree through the close of academic year 1972-73. During the same period, 13 students completed their programs receiving the MSAS degree. The enrollment as of autumn 1973 was up to 15 which indicates a probable graduation rate of from 6 to 8 students each year in the immediate future.

Department of Mathematics

The Master of Science degree in Mathematics is available in several areas of specialization in mathematics and in statistics. The stress at the master's level will continue to be on quality in teaching, service, and research. Flexibility exists in the program allowing study in pure math, applied math, and/or mathematics for the secondary or junior college teacher. An attempt is made to tailor each program to the individual needs of the student. Programs for teachers are designed to prepare the teacher in all subject areas in which he might be expected to teach. Since 1970, the department has graduated 22 students with the MS in Mathematics, and 7 students have completed the program for the Master of Science in Applied Science with a concentration in mathematics. Under the present conditions, those students who formerly earned the MSAS degree now pursue the MS degree. The expected annual production at the master's level will continue to be from 8 to 10 each year.

Department of Microbiology

In microbiology at the master's level thesis plan, the emphasis is placed on providing research experience for students who plan to seek employment at the MS level or continue academic work toward the PhD. Most opportunities are in medical microbiology and environmental health because of faculty interests and funding of research in those areas. Students desiring to take additional course work in place of a research thesis will continue to be able to do so. Emphasis will continue to be on educating students for Federal, state or local government, university, industrial and hospital positions which require the MS degree. As with the thesis plan programs, it is likely that most educational opportunities for students will be in the areas of medical microbiology and environmental health. The department plans to increase their cooperation and form stronger ties with the Rocky Mountain Laboratory in Hamilton, the McLaughlin Institute in Great Falls, the Laboratory Division in the Department of Health and Environmental Sciences in Helena and the Boulder River School and Hospital in Boulder.

Twenty-seven MS and two MSAS degrees have been granted the last three years. Based on funding available, faculty loads, and current enrollment and admissions criteria, it appears that master's level graduate production will remain stable.

Department of Physics

The Department of Physics offers a balanced program of experimental and theoretical research in atomic, molecular and solid-state physics, astrophysics, and general relativity. Research in this department is currently being supported by the National Science Foundation, the National Bureau of Standards, the National Aeronautics and Space Administration, the Air Force Office of Scientific Research, and the State of Montana.

Fifteen students have been granted the Master of Science degree in Physics and one the MSAS during the last three years. Because of the tight Federal and State funding circumstances it is difficult to compete for students. Therefore, it is probable that enrollments will not increase and may, in fact, decrease until new sources of funding for student support can be secured.

Department of Psychology

The relatively new MS degree in Psychology with emphasis in human factors will continue to be offered. A slightly broader view is currently being taken of who can benefit from the program, and course offerings are being strengthened through the judicious selection of supporting coursework in other departments. High calibre students with maximum potential for working in the applied areas of psychology with a master's degree or continuing toward a PhD degree elsewhere will be admitted. The departmental goal is to have a master's program with about 7 to 10 strong candidates entering the program each year.

Four students received the MS degree in Psychology during the two academic years, 1971-72 and 1972-73. In 1970-71, six students were granted the MSAS degree in this field. With the projected admission standards and limits, it is expected that graduate production from this department will peak and stabilize at from 5 to 8 per year.

Department of Sociology

This department does not currently offer a master's degree. However, it was one of the strongest users of the Master of Science in Applied Science program until that program was terminated. From 1967 through 1973, a total of 51 MSAS degrees were granted with a concentration in sociology.

The department has made a proposal which has been approved by the Executive Board of the Graduate Faculty at MSU for a Master of Science degree in Sociology. In January 1973, the department stated a number of reasons that serious consideration should be given to the addition of a Master of Science degree in Sociology. Some of these follow:

First, the teaching program in the department was built upon the basis of the availability of teaching assistants, making possible the student credit hour per FTE ratio attained in recent years--50% higher than the next highest departments, Commerce and Psychology.

Department of Sociology (continued)

Second, the research function and commitments of the department to the Agricultural Experiment Station and to ERF were predicated on the availability of professional skill levels of trained graduate research assistants. These students under the old program assisted in departmental research, especially supervising interview teams in the field, and in the tabulation and coding operations of analysis. The sociology staff, with one exception, all have Station research commitments and now no such resources exist in the form of trained (and training) personnel to make possible meaningful research for the State and its communities. With environmental grants needing social and behavioral science components, the staff (who teach full time during the academic year) are in no position to make serious commitments to research on coalstrip mining, weather modification, community development, urban renewal or other large-scale research undertakings. Some of our staff would very much like to become involved in the above if resources allow. Simply hiring additional teachers, temporarily, at lower levels of background and skill to release present teachers of teaching duties does not appear to be a sound way of involving sociology staff in the greater and more demanding research efforts at this institution.

Third, at the time of the demise of the Master of Science in Applied Science programs, sociology had 24 graduate students in its program. The department, over the past four or five years, sought to change the MSAS to an MS in Sociology for purposes of training its graduate students more professionally to be sociologists.

Fourth, efforts in the staffing of the department have been directed toward a balance of areas covered (theory, research methods, deviance, demography-ecology, social psychology, social organization, etc.) to achieve a balanced undergraduate offering and the possibilities of some specialization at the graduate level with strong emphasis on the empirical training of graduate students.

Fifth, both library and hardware (two computer terminals with adequate budgeting) were provided for to this end.

Sixth, the graduates put out by the department have placed well in other institutions as PhD candidates, as instructors, or as research professionals.

Department of Speech Communication

This department is not authorized the offering of a master's degree. We wish to indicate for information only the statement which presently exists in the Montana State University Graduate Bulletin.

"Graduate students wishing to pursue the Master of Arts with a major in speech communication and an emphasis upon study in related fields may enroll in the cooperative Master of Arts program offered in conjunction with the University of Montana. The Master of Arts degree will be granted by the University of Montana, but up to one year of course work may be taken at Montana State University."

College of Education (Master and Doctor of Education and MS in Phys. Educ.

Three degrees are currently available within the College of Education, the Master of Education, Doctor of Education, and Master of Science in Physical Education. Three departments, Educational Services, Elementary Education, and Secondary Education and Foundations offer areas of concentration within both the MEd and EdD degrees. Physical education has offered degree programs leading to both the Master of Education, and Master of Science in Physical Education. The major emphasis since the Master of Science in Physical Education was authorized has been on that degree. The Ed D program is not utilized in physical education.

Montana State University has enjoyed a favorable reputation in graduate education as evidenced by placement and success of graduates from this institution. The reputation of the graduate offerings has attracted students from increasingly wider geographic areas. The program at the doctoral level has shown steady growth and students with highly successful public school, college teaching, and related backgrounds are presently enrolled in the program.

Department of Educational Services

Graduate study in school administration, guidance and counseling, adult education and higher education leading to the Master of Education degree is offered by this department. Appropriate programs are available which lead to endorsements as school counselors, high school principals or school superintendents.

The Doctor of Education degree is available in the areas of general school administration, higher education teaching, adult education, and student personnel services. Students seeking admission to the Ed D program in general school administration must hold an appropriate teaching certicate.

School Administration

School administration is an important part of the overall program in this department. There are two institutions in the state which have the authority to certify school administrators. This program is important to the University because it brings in people with considerable expertise who influence undergraduate programs. The administration program is one of the oldest areas of emphasis within the College. With the growing demand for trained school administrators, this experienced department is in a good position now to serve the needs of the schools of Montana. During the years 1969 through 1973, 45 M Ed degrees with emphasis in school administration (principal or superintendent) have been granted.

Adult and Higher Education

Enrollments in higher education expanded greatly during the decade of the sixties, with a consequent need for many additional faculty members. One of the fastest-growing segments was the community or junior colleges, and these institutions were somewhat disenchanted with hiring staff who had pursued traditional Ph D programs with emphasis on research and with little training for the teaching function. Even in four-year colleges, one of the greatest needs for the faculty was for persons who could teach courses at the freshman and sophomore level.

Adult & Higher Education (continued)

In order to meet this need for college teachers and administrators, MSU developed during the mid-sixties an Ed D program with an emphasis on higher education. A sequence of courses was established which would enable persons who graduated in this program to serve as college admistrators or as teachers in a variety of fields, e.g. education, business, history and nursing. Since its inauguration, this program has provided (and is continuing to provide) faculty members for many of the units of the University System, as well as for colleges and universities outside of Montana.

People are generally aware of the growth that has occurred in vocational-technical schools during the last few years, but are not as aware of the large number of adults participating in a variety of other programs such as adult basic education, public school evening classes, and classes sponsored by public and private agencies. By 1970 it was apparent that a graduate program was needed to prepare teachers and administrators for these rapidly-growing programs, and Montana State developed a Master's degree in Adult Education. The demand for prepared persons in this area continues to increase, as well as a need for in-service assistance for persons already working in the field. We have attempted to develop a program which will meet these needs as well as provide leadership to the state and region. This program has graduated in the last four years, 1 M Ed student and 11 doctoral students.

Guidance and Counseling

The assisting of students in the selection of a meaningful occupation is only one of the functions of the school counselor. Primarily, he assists students to overcome personal and social obstacles to learning, become more aware of their potential and realize this potential for living through personal counseling, and consultation with others. This counseling is often on a personal one-to-one basis, but frequently the counselor utilizes small group methods and procedures. The counselor's work does not end with this. however, since his duties also include assisting the staff and students in other ways. The counselor is often asked to help in formulating and conducting the school's standardized testing program. He needs to achieve a high degree of expertise in this area, since he is expected to both administer these tests and interpret them to students, teachers and sometimes parents. In addition, the counselor is frequently required to conduct follow-up studies evaluating the effectiveness of the school's counseling and guidance program.

What the counselor is required to do on the job necessarily dictates the focus of our counselor training program. Here at Montana State University we attempt to prepare our students for the duties and responsibilities mentioned above through two avenues -- the affective and the cognative. Neither one is totally exclusive of the other.

On the affective level the student is afforded an introduction into the counseling enterprise, given a practicum experience in dealing with people on a one-to-one basis, and provided both training and experience in working with small groups. He is given a simulated experience in administration and interpretation of common standardized tests. Finally, his program allows for personal experience in the use of individual mental measurements through application of these tests to actual cases.

Guidance and Counseling (continued)

On the cognative level, students are provided the theoretical and philosophical basis for successful work with individuals and small groups. They are also given a strong conceptual base for the use of psychological tests -- both group and individual. The understandings of human behavior is further strengthened through appropriate courses in psychology, sociology, and specific education courses or the home economics, family life series.

Our program is essentially designed to train well-qualified school counselors and the majority of the counselor education students go into public school counseling. However, there has been a great demand in recent years for counselors in positions outside the public schools. To meet this demand, we do train a selected number of counselors that are not school certified and do not go into school counseling. These trained individuals take jobs in a variety of "people oriented" occupations such as: Mental Health Centers, Drug Rehabilitation, Crisis Centers, Employment Service Interviewers or Counselors, Residence Hall Supervisors or Counselors, delinquent rehabilitation work. Some graduates have even gone into other occupations where their counseling skills were used indirectly.

By far the largest of the M Ed specialties, the guidance and counseling program has graduated 73 students during the past four years.

Pupil Personnel Services

The demand for persons holding the Doctorate of Education degree in Pupil Personnel Services comes from varied sources. Individuals holding the degree can compete for positions such as: Dean of Men or Women, Dean of Students, Director of Personnel, Director of Student Affairs, Director of Placement Services, Director of Student Housing or positions similar to these. In addition to these positions which are essentially administrative in function, a student may become, through individual emphasis, prepared for a position in counselor education, or as counselor in a university or junior college counseling center.

It is because of the varied nature of the demand, that the Doctorate of Pupil Personnel Services is a highly individualized program. The candidate begins his program by developing a sound basis for understanding human behavior. A large variety of these courses at the graduate level are available. The most appropriate departments for providing this experience have been Psychology, Sociology, Educational Services and Home Economics - Family Life. The emphasis here would be on courses which stress understandings of human development and behavior. From these understandings the candidate can build and implement his personal philosophy of human communication and behavior. Then specific courses in Higher Education or Personnel Services can be added commensurate with the candidate's desires.

To augment a fundamentally sound grasp of human behavior, the candidate is allowed a wide choice of meaningful practical experiences. Open to him are practical experiences in the Counseling Center, Student Health Service, Registrar, or any of the student Dean's offices. Here the candidate works intimately with persons supervising these offices and is himself frequently asked to assume responsibilities in these departments. Eight Ed D degrees have been awarded during the last two years to students who specialized in student personnel services.

Department of Elementary Education

The Department of Elementary Education offers the Master of Education and Doctor of Education degrees. The department holds the philosophy that each graduate student should: (1) demonstrate the scholastic and leadership skills necessary to lead in elementary school curriculum matters and affect constructive change through action research, or (2) demonstrate the scholastic and organizational skills to serve as an effective elementary school principal or supervisor.

Generally, the master's candidates desire to become elementary school principals or take advanced training to become more able classroom teachers. Certification requirements are written into the programs which lead to a Class III Elementary Principal's Certificate and/or a Class I Teaching Certificate.

Doctoral programs offered through the department prepare people for positions of top leadership in elementary education such as superintendent of elementary school systems (K-8), directors of elementary education in school systems, and supervisors in elementary schools. Preparation of people to teach in colleges and universities that prepare teachers, or to serve in State Departments of Education or other education related agencies is also available through the department.

Elementary school principals and curriculum specialists trained at MSU hold influential and critical positions in most major school systems in the State of Montana. Doctoral graduates are teaching in universities, holding administrative positions and supervising elementary school programs.

The staff has both the training and experience to present graduate instruction effectively. The size (9 professionals) and diversity (language arts, elementary school administration, reading, social studies, science, bilingual education, mathematics, art, physical education, and music) of the staff allows for a specialist in each of the elementary education curricular areas. Ongoing research has improved and both staff and students are making contributions to the statewide improvement of instruction in elementary education in Montana.

Enrollments in elementary education at the graduate level are expected to hold relatively constant or increase slightly during the next few years. Six doctoral and 33 master's degrees have been awarded during the last three academic years.

Department of Physical Education

The goals of the graduate program in physical education will continue to be to help upgrade the teachers of Health and Physical Education throughout the State and nation. Teacher renewal and continuous opportunity for advanced preparation will be provided by special workshops and continuing education courses at various locations around the State in addition to regular campus offerings.

Graduate programs will become more specialized into the areas of physical education and athletic administration, physiology of exercise, biomechanics, health education, recreation and curriculum. Recent trends in individualized programs and individually designed projects will be emphasized. The recent addition of a Human

Department of Physical Education (continued)

Performance Laboratory and a Biomechanics Laboratory greatly enhance the potential for graduate research in the department.

Since 1970 the department has granted 10 Master of Education degrees and 27 Master of Science in Physical Education degrees. The emphasis will probably focus on the MS program with annual degree production to be around 10.

Department of Secondary Education and Foundations

The Department of Secondary Education and Foundations offers graduate programs designed to meet the needs of classroom teachers, department chairpersons, district curriculum coordinators and curriculum specialists.

Master's degree programs in secondary education have the basic goal of assisting teachers improve their knowledge of teaching techniques, assisting them in understanding research studies and obtaining greater depth in subject area specialities.

At the doctoral level, the Department of Secondary Education and Foundations, responding to increased needs of school districts, state departments of education, and regional and national education organizations offers programs in curriculum and instruction.

Graduate programs at both levels are individually designed to respond to the special needs of each individual student. The student may be an individual who holds a position requiring additional training or an individual who is preparing for a different position. Since it seems that a major responsibility of a state university is to serve the needs of the people in the state, the graduate programs offered by the Department of Secondary Education and Foundations fit into the service function of the University by meeting the needs of educators to provide quality education for Montana children. Having graduate programs demands a faculty with the skills to teach graduate students in a variety of areas which, in turn, means that those individuals are available to provide service to the State and to local school districts.

During the past four years, 25 persons have received the M Ed. One Ed.D. has been granted.

Cooperative M.Ed. Program with the College of Great Falls

Until 1969, persons in the second largest city in Montana did not have commuting access to any graduate program, either public or private. The College of Great Falls felt a need to be of service to these persons, particularly those in the local school system, but felt that they could not afford to develop a complete graduate program of high quality. So they turned to Montana State University to see if some program couldn't be developed which would enable them to capitalize on their areas of strength and would make it possible for teachers and administrators in and near Great Falls to take much of their graduate program without having to move their families away for several summers.

A cooperative M.Ed. program between Montana State University and the College of Great Falls was initiated starting with the summer session of 1969. Graduate work was offered for school administrators, elementary teachers, and high school teachers in the fields of English, History and Biology. (High school teachers in other fields could also avail themselves of the offerings in education which would apply to their program, but it was necessary for them to take all of the credits in their subject matter area at MSU).

The way the program operates is quite simple. Students are allowed to take 27-30 quarter credits on the campus of the College of Great Falls as compared to the 15 quarter credits which are normally accepted for transfer. In order for this to be possible, it was agreed that all courses offered in the program and staff for these courses must be approved by the appropriate department at MSU. An attempt has been made to have the departments in the two institutions work together in the development of similarly-structured and titled courses.

Students in the Cooperative Program are required to meet the same admission criteria as the regular students in the M.Ed program at MSU. Committee structures and procedures are the same as those provided in the MSU Graduate Bulletin, with the further proviso that one representative on the committee be from the College of Great Falls. Final examinations are the responsibility of MSU and are administered as provided in the current Graduate Bulletin of MSU. The degree is conferred by MSU. Students pay the scheduled fees of the institution which they are attending at any given time.

This Cooperative Program was included in those accredited by the National Council for Accreditation of Teacher Education. We believe it marks a milestone in the kind of imaginative programs which can be developed that will fully utilize existing educational facilities and require minimum financial support for quality programs. It is similar to many other cooperative graduate programs which have been developed between institutions in other states, but it is somewhat unique in that it involves cooperation between a public and a private institution.

During the years 1969 through 1973, a total of 73 courses have been taught on a cooperative basis at the College of Great Falls. During those same years, 50 students have been admitted to the Cooperative Master's Program and 10 of those have now received a master's degree.

FISCAL YEAR 1972-73
MSU MASTERS PROGRAM DEPARTMENTS/SCHOOLS

	Instruction & Departmental Research Expenditures	Student Credit Hours Produced	Weighted Student Cr. Hrs. Produced	Expenditure per SCH	Expenditure per WSCH
AGRICULTURE					
Ag. & Ind. Educ.	99,336.19	1,845	3,560	53.84	27.90
Animal & Range Sci.	224,797.87	7,553	11,997	29.76	18.73
EDUCATION					
Physical Educ.	237,440.72	18,205	29,145	13.04	8.15
ENGINEERING					
Ag Engineering	53,309.95	2,024	3,508	26.34	15.20
Ind. Engr/Comp. Sci.	217,299.08	6,237	11,459	34.84	18.96
LETTERS & SCIENCE					
Earth Sciences	178,091.05	7,515	9,638	23.70	18.48
Hist., Govt., & Phil.	278,330.74	19,524	26,590	14.26	10.47
Psychology	150,388.00	11,558	15,974	13.01	9.41
PROFESSIONAL SCHOOLS					
Art	210,099.25	10,034	15,210	20.94	13.82
Commerce	336,141.01	22,955	34,795	14.64	9.66
Home Economics	208,223.13	18,699	24,026	11.14	8.66
Nursing	542,010.67	17,536	28,836	30.91	18.80

EASTERN MONTANA COLLEGE

GRADUATE PROGRAM REPORT

Origin and Purpose

In 1954, Eastern Montana College was authorized to grant the Master of Science in Education Degree. The College is accredited by the Northwest Association of Secondary and Higher Schools for granting the Master of Science degree in Education. Programs are available in Elementary Education and Special Education. In June, 1968, the College was authorized to offer the Master of Science degree in Rehabilitation Counseling.

The graduate program at Eastern is designed to meet a need long felt in the geographical area which the college serves. The purpose of the graduate program is to enable students to pursue advanced study in a combination of courses from the fields of professional education, rehabilitation counseling, and from certain selected subject areas. The educational philosophy prevailing at Eastern Montana College endorses a program of graduate studies which enables the students to grow along broad academic and professional lines.

The graduate program endeavors to offer students the opportunity to develop skill in the critical appraisal of their work as well as that of others, to enlarge the mastery of the subject matter of a defined field, and to refine their philosophies in their chosen field.

Degree Programs

Students who plan to complete the Master's Degree must select a major field from one of the following:

- Master of Science in Education with options in:
    - Early Childhood Education
    - General Curriculum
    - Reading
- Master of Science in Education with options in:
    - Education of the Mentally Retarded
    - Education of the Physically Handicapped
    - Learning Disabilities
    - School Counseling K-9
- Master of Science in Rehabilitation Counseling

Master of Science in Rehabilitation Counseling

The Master of Science in Rehabilitation Counseling requires two academic years (six quarters) for completion, a minimum of ninety quarter hours. The program is interdisciplinary in nature with course work covering a wide range of subject areas. One quarter consists of supervised clinical practice with an appropriate state or private agency which provides an opportunity for application of theory in the practice of rehabilitation counseling and case management.

Fifth Year Program

Students who do not wish to work toward the advanced degree but do desire to be certified as having completed a fifth-year plan-of-study may develop this program at Eastern. Fifth-year programs are planned by the student and his assigned adviser*. The design of such a fifth-year program must be adapted to the student's needs and professional plans. Such programs involve not less than 45 quarter hours of work beyond the bachelor's degree. All students applying for the Fifth-Year Program must fulfill the requirements for admission to the teacher education program. Students electing the Fifth-Year Program are not required to take the Graduate Record Examination. (*If the applicant is an employed teacher, the Superintendent of the school system must also approve the proposed plan-of-study.)

The completion of an approved fifth year program qualifies the student for Class I certification; however, a minimum of three years of successful teaching at the elementary or secondary level is required.

MASTER OF SCIENCE DEGREES AWARDED BY AREA

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
Master of Science in Education	14	15	8	14	15	18	15	18	32	34	33	39	28	37	67
Elementary Education	2	1	3	4	4	5	3	8	9	11	8				
Early Childhood Education		1												1	
General Curriculum												7	4	11	20
Reading	1	4	1		1	2	1	1	4	2	6	7	6	10	19
Secondary Education	1	3	3	4	6	3	4	4	2				1		
Special Education	2	3	1	1		1	3	11	16		13	14	8		
Education of the Mentally Retarded														4	8
Education of the Physically Handicapped															2
Speech and Hearing		1													
Learning Disabilities													1		5
School Counseling K-9	8	2		5	3	8	6	2	6	5	6	11	8	11	18
Master of Science in Rehabilitation Counseling												8	7	8	17

NORTHERN MONTANA COLLEGE GRADUATE STUDIES

Northern Montana College offers graduate programs leading to the Master of Science Degree in Elementary Education and the Master of Science Degree in Vocational Technical Teacher Education, under which is offered an option in Career Guidance. Authorization was granted in 1954 in Elementary Education and in 1968 for the degree in Vocational Technical Teacher Education. Both programs were implemented in 1968.

With the June graduation of 1974, it is estimated that Northern Montana College will have awarded 26 Master of Science Degrees in Elementary Education and 43 Master of Science Degrees in Vocational Technical Teacher Education. Of these 69 persons who will have been granted master's degrees by June, 1974, the great majority are teaching in Montana.

The purpose of the master's degree programs at Northern Montana College is to prepare master teachers for the vocational technical programs of the state, and, in the case of the program in elementary education, for the schools in the Northern Montana College service region in particular.

The staff in the departments of education and vocational education carry heavy loads such that it is not the case that staff reductions could be effected in either of these fields if Northern Montana College did not offer the master's degree. All staff in teacher education possess the doctorate; two of the three in vocational education possess the doctorate, while the third will earn that degree when he completes the dissertation.

The usual arguments about the graduate program complimenting the undergraduate program apply at Northern Montana College as at other institutions. With the preparation of excellent teachers the primary aim of the graduate programs at Northern Montana College, a strong orientation toward graduate research is neither featured nor considered highly relevant. It should be noted that Northern Montana College has, in cooperation with sister units, been involved in N.S.F. projects aimed at upgrading science and mathematics teaching in the elementary schools of the state. So while the accrual of federal funds for research purposes has not been a major outgrowth of our graduate program, the availability of federal funds for the improvement of teaching in the schools of our service region is an important development which could not have taken place if we offered no graduate programs.

APPENDIX A-8

WESTERN MONTANA COLLEGE
DILLON MONTANA 59725

April 10, 1974

GRADUATE EDUCATION AT WESTERN MONTANA COLLEGE

General Statement

Graduate study in Education is an integral part of the mission assigned to Western Montana College. In fulfilling its role as a teacher education institution, Western offers to those students who are capable and wish to pursue graduate level studies the opportunity to enhance their educational horizons.

The graduate program at Western Montana College is designed for the purpose of providing to the public schools of Montana and the nation better qualified personnel. With this view in mind, faculty with expertise in solving problems associated with the public schools has been assembled on the campus.

Since the aim of the graduate program at Western is to provide better practioners at the school level, profound, theoretical research is not envisaged. However, research methodology is taught as it applies toward making the school practioner better able to understand the literature and to help him apply that understanding for the betterment of the children in the schools.

Hopefully, the graduate students in senior level classes will provide challenges for the undergraduates and, in many cases, will be able to give practical examples of topics under discussion.

All graduate Education courses are taught by faculty members who are experienced and competent in their areas. Those graduates who have completed programs at Western have been well-accepted in their profession and are able to compete, successfully, with master's graduates of other institutions. The administration and faculty of the college feel that the program is filling a definite need.

Evidence of acceptance of the programs is indicated by the number of graduates of the master's and fifth year courses of study: 1956, 2; 1957, 4; 1958, 6; 1959, 7; 1960, 11; 1961, 15; 1962, 20; 1963, 18; 1964, 16; 1965, 17; 1966, 14; 1967, 16; 1968, 29; 1969, 31; 1970, 33; 1971, 32; 1972, 14; 1973, 36.

The Education office also maintains files on approximately 280 students enrolled in various stages of graduate programs.

Objectives

The primary objective of the graduate program at Western Montana College is to provide better prepared educators for the public schools of Montana and the nation. It is the belief of the college that this is accomplished through the graduate programs now offered at Western.

A secondary objective of graduate education at Western is to enable the student to pursue those courses which will help to make him a well-rounded individual.

The Graduate Committee

The Graduate Committee is composed of six members appointed by the president. The Director of Graduate Studies, who is the chairman, and two members are from Education and three members are from the college-at-large.

The Director of Graduate Studies administers the graduate programs within the regulations adopted by the Committee. If a study wishes to appeal a decision by the Director, he will be granted a hearing by the Committee in order that he may state his case. The decision of the Committee is final, although an appeal may be made to the President or the student has the usual legal recourses. The instances on which the Committee is called to act are few, as the regulations for the graduate programs are clear. In addition, the flexibility within the graduate program obviates constant interpretation.

The Graduate Program

A copy of the information sheet given to graduate students is attached.

WESTERN MONTANA COLLEGE
Dillon, Montana 59725

THE GRADUATE PROGRAM

Areas of Study--Areas of concentration include the Fifth-Year Program leading o the Professional Certificate, and the Master of Science in Education.

Admission--Baccalaureate graduates of accredited institutions, who have ompleted 24 credits in Education, may register in the Graduate Program. Seniors t Western who need no more than nine credits to complete the requirements for he bachelor's degree and who have an overall grade point average of 3.0 or higher ay enroll in additional courses for graduate credit. In such cases the student's oad, including graduate and undergraduate courses, is limited to 16 credits.

A FIFTH-YEAR OF PROFESSIONAL STUDY (45 QUARTER CREDITS)
(Preparation for the Montana Professional Certificate, Class I)

1. Twenty-four credits in the field of Education.*
2. At least 15 credits outside the field of Education.
3. Elective 6 credits.

*Required Courses: 30-539 or 540, 30-670, 36-533, 39-525.

Admission to the Fifth-Year Program leading to the Professional Certificate oes not constitute admission to the Master's Degree Program. In order to work for he Professional Certificate, the student should complete an admission form and have program of studies approved before or during the first course preparation at estern for which graduate credit is expected. Forms are available from the Director f Graduate Studies. The student's academic advisor will be appointed through the raduate office.

MASTER OF SCIENCE IN EDUCATION

Degree with Thesis (45 quarter credits)

1. Twenty-four credits in the field of Education, including thesis.*
2. At least 15 credits outside the Department of Education.
3. Elective 6 credits.
4. Final written and oral comprehensive examinations required.

Degree without Thesis (54 quarter credits)

1. Twenty-four credits in the field of Education.*
2. At least 15 credits outside the Department of Education.
3. Elective 15 credits.
4. Final written and oral comprehensive examinations required.

* Required courses: 30-539 or 540, 30-620, 30-670, 36-531, 36-533, 39-525.

Admission to the Master of Science in Education Program does not constitute admission to the Fifth Year Professional Certificate Program. In order to be admitted to the Master of Science in Education Program, the student must:

1. File a completed application for admission to the graduate program with the Director of Graduate Studies before or during the first course preparation at Western for which graduate credit is expected.
2. File with the Registrar official transcripts of all college preparation.
3. Submit a program of studies to the Director of Graduate Studies for approval.
4. Achieve an approved percentile on the Miller Analogies Test and a rating of "Satisfactory" on the Graduate Essay and the Graduate Interview. Should the essay be rated as "Unsatisfactory", the student must wait until the following quarter and not less than six weeks to repeat the test. Additional preparation may be required of the student before re-writing the essay.

GENERAL REQUIREMENTS

Courses--Courses in which graduate credit may be obtained are those numbered 500 and above. Additional work will be required of students who elect courses 500-599 for graduate credit. Courses numbered 600 and above are open only to graduate students. Graduate credit will not be allowed for a course unless an official baccalaureate transcript is on file and grade cards are stamped "Approved" by the Director of Graduate Studies.

Grades--A grade point average of at least 3.0 must be achieved on preparation toward the master's degree and a grade point average of at least 2.5 for the fifth year program. All grades in courses taken for graduate credit will be included in computation of grade point averages. Preparation with grades below "C" will not count toward course requirements.

Study Load--The maximum number of credits obtainable in a regular quarter or a summer session is 16 quarter hours. The maximum credit load for a five week summer term is 9 quarter hours and 7 quarter hours for a four week term.

Residence--Of the total credits required for the master's degree and fifth year program, at least 30 quarter hours must be obtained in residence at Western Montana College.

Extension and Correspondence--Graduate residence preparation not to exceed 15 quarter hours may be accepted from units of the Montana University System. Extension courses do not count as residence work. Correspondence courses will not be accepted for graduate credit.

Transfer of Credit--Graduate residence preparation not to exceed 15 quarter hours may be accepted from other accredited graduate programs. No transfer work with less than a "B" grade will be accepted toward a degree or less than "C" grade on the fifth year program. The total credits of transfer and extension cannot exceed 15 quarter hours. A maximum of 30 quarter hours of preparation may be transferred from the Fifth-Year to the Master's Degree Program.

Teaching Experience--Before the Master of Science degree is granted, the candidate must present evidence of at least one school year of successful teaching.

Time Limit For Degree--All graduate credits for the Fifth-Year Program or for a Master's Degree must be earned within a period of seven years.

Thesis--Students selecting the thesis program must prepare a thesis consistent with the standards of research of the profession. A thesis advisor will be assigned by the Director of Graduate Studies. A maximum of six quarter hours may be granted for a thesis. The original and first copy of the thesis for binding, and an abstract, must be deposited with the Librarian at least one week before the end of the quarter in which the degree is to be granted, except in the spring quarter when this material must be deposited with the Librarian two weeks before the date of commencement.

APPENDIX B

STATE OF MONTANA

SUPERINTENDENT OF PUBLIC INSTRUCTION

'ELENA 59601

DOLORES COLBURG

March 19, 1974

To: JoEllen Estenson
Deputy Director, Commission on Post-Secondary Education

From: Dolores Colburg

Re: Board of Public Education Policies and Administrative Procedures Applying to Vocational Education in Montana

Per your request of March 6 to my assistant, Ms. Cheryl Hutchinson, I am pleased to provide information on the ways in which Section 75-7702, R.C.M. 1947, has been implemented through the Board of Public Education and the Superintendent of Public Instruction as executive officer of vocational education. I regret the delayed response, occasioned only by an extraordinarily pressured schedule which has distracted my attention from compiling the information in the format you indicated would be preferable.

Some history, first, may be in order. The former State Board of Education minute entries from 1963 through 1973 prove that the term "policy" was scantily used in recording the board's deliberations. One can exercise a good deal of discretion, therefore, in separating legitimate policy from precedent and procedure and from isolated, "one-time" action. The minutes of the former board have been perplexing to me and to members of my staff because they lack explicitness; since the new Board of Public Education inherited the past "policies" of the former board as a legacy, one of our goals has been to examine and revise (reaffirm or discontinue) actions which pertain to vocational education so that policy is clearly identifiable. Should some of the following comments seem evasive, it can be attributed either to a lack of specificity in the historical documents I cite or to a deliberate attempt not to be repetitive of the rather detailed information contained in publications (e.g., the Montana State Plan for the Administration of Vocational Education or the booklet Certification of Teachers and School Administrators in Montana) readily available from my office. I assume you have copies of those publications at hand; if not, please advise.

You may be interested to know that a thorough, comprehensive review of past board actions is underway in my office on behalf of the Board of Public Education, specifically the newly established Vocational Education Committee. Well over a year ago, my office also initiated monthly meetings with the directors of the five post-secondary vocational-technical centers to avoid any unnecessary duplication of programs and to accelerate program coordination; the monthly meetings also promote an understanding of each center's role in the statewide system. Now that Montana has a board at the state level that can devote its attention solely to public elementary, secondary and vocational education, it is my opinion that board governance promises increased influence and effectiveness.

With that brief background for perspective, I will proceed with providing information relating directly to each of the subsections of Section 75-7702 for your consideration. Material underlined is quoted directly from the statutes.

"In order to accomplish the orderly development of a system of vocational education, the board of [public] education policies shall include:

> (1) a state plan for such development;"
>
> The Board of Public Education has adopted a state plan for the administration of vocational education in accordance with federal law and regulations. This plan is largely a compliance document to fulfill federal mandate and is written utilizing federal guidelines to ensure receipt of Montana's share of federal funds appropriated for vocational education. While the federal guidelines for writing a state plan are specific and rather inflexible, we have attempted to write a plan that would serve not only federal but state needs. The plan is divided into two parts: Part I gives administrative provisions, and Part II addresses itself to annual and long-range program provisions with an outline for implementing and conducting programs. The plan is annually amended and approved by the Board of Public Education. As such, policies reflected in the plan become the policies of the board. Though distinct policy statements do not currently exist in the Board's minutes relating directly to several of the questions you posed, I would direct your attention to the state plan, particularly Part I, for specific references to many of the provisions pertinent to your study.
>
> "(2) standards for vocational education courses and programs;"
>
> Standards used in reviewing and recommending vocational education courses and programs to the board for approval are those cited in the state plan as well as those that have been developed as part of the review procedure established by my office.

"(3) instructor qualifications for vocational education courses and programs;"

In September 1968, the Board of [Public] Education adopted policies and rules for the issuance of class 4 teaching certificates, a category applicable to all vocational education teachers who teach in high schools or other state institutions where certification of teachers is a requirement. Class 2 certification with appropriate endorsement also fulfills state certification requirements for instructors of vocational education. Additionally, Part I, Section 1.3 of the state plan sets forth the experience qualifications for vocational education teachers.

"(4) criteria for approval of vocational education courses and programs which are to receive financial assistance;"

All vocational education course and program proposals are submitted to the Superintendent of Public Instruction for review. The Superintendent utilizes criteria specified in the state plan, as well as any other consideration inherent to the review and planning process, in making recommendations to the Board of Public Education for approval of courses and programs. Under consideration now for recommendation to and implementation by the Board are the following definitions:

1) program--a series of courses designed to prepare students for immediate employment or upgrading in a cluster of occupations

2) cluster of occupations--a cluster of occupations has many similarities, including the following: the type of work performed; the basic attitudes and acquired knowledge and training required; the tools, machines, instruments and other equipment used; and the basic materials used

3) program option--selected courses within a program which prepare students for immediate employment or upgrading in a specific occupation chosen from the program's occupational cluster

4) course--an organization of subject matter and related learning experiences provided for students on a regular or systematic basis for a predetermined period of time.

In reviewing programs annually to determine recommendations for continuance, expansion, termination or addition, my staff applies the following measures:

1) consistent with vocational education according to the objectives of Part II of the state plan,

2) consistent with state and federal statutes,

3) objective to be reached by the program,

4) an annual and long-range plan,

5) individual training needs which will be satisfied,

6) industry needs which exist,

7) the establishment of an advisory committee,

8) employment opportunities which exist for graduates,

9) financial resources which are available,

10) other schools offering similar educational opportunity (unnecessary duplication), and

11) school's ability to offer course or program:

    a) success of graduates
    b) realistic and adequate curriculum
    c) qualified staff
    d) adequate building and equipment facilities
    e) industry cooperation and acceptance
    f) cooperation with labor
    g) adequate opportunities for related subject matter.

Proposed programs are scrutinized, as well, according to such indicators as projected enrollment (no less than 10 students), employment opportunities, cost, course requirements, possible unnecessary duplication and planning. Existing courses, on the other hand, are terminated when employment opportunities no longer exist, when student enrollment drops below 10, when it is considered best to offer the program at another site or when the program consistently has had a very low success pattern regarding its graduates.

"(5) a basis for apportionment of all moneys appropriated by the legislature for vocational education in accordance with the intent of the legislature as reflected in terms of the appropriation;"

The language of state appropriation measures largely dictates the manner in which moneys will be expended for vocational education. Where latitude is provided within state appropriation measures, the Board disburses the moneys in accordance with the formula and provisions in the state plan and attendant recommendations of the Superintendent of Public Instruction. Requested and subsequently appropriated construction moneys, for instance, have in recent years been apportioned according to a plan to be carried out in several phases; once moneys are appropriated, administration of the funds is accomplished through the State Department of Administration under a contractual agreement (executed with the concurrence of the Board of Public Education) with the local school district. The Superintendent of Public Instruction, then, periodically monitors and reports progress to the Board according to the terms of the agreement.

"(6) a basis for apportionment of all moneys received by the state of Montana for vocational education from the federal government in accordance with the Acts of Congress;"

Other than the annual filing of the state plan (or amendments to the state plan) previously referred to, no real policies are needed by the Board of Public Education in disbursing federal moneys since federal law makes quite explicit the categories in which federal vocational education moneys may be expended. Any latitude with federally specified categories for expenditure of moneys is provided for in the state plan.

"(7) a system of evaluation of vocational education which allows for consideration of the current and projected manpower needs and and job opportunities;"

Again, the state plan addresses both evaluation criteria and personnel; cooperative efforts with other state and federal agencies who deal with manpower programs and predictions also is explained in the state plan. To further illustrate evaluative influences, it is important to note that

1) vocational education programs and courses are reviewed along with general education courses by evaluation teams from my office for accreditation purposes;

2) vocational education supervisors from my office evaluate through on-site visitations, consultation with teachers and administrators and a review of program applications;

3) the Research, Planning, Development and Evaluation component of my office conducts an annual entry/exit and follow-up study of all students enrolled in vocational education;

4) the Montana Advisory Council for Vocational Education conducts an annual evaluation and develops a report as required through federal legislation;

5) the five post-secondary vocational-technical centers engage in a "participative evaluation" which is utilized for accreditation (currently, the centers are seeking national accreditation as provided by the U. S. Commissioner of Education through alternative accreditation); and

6) a statistical report and descriptive report of program activities along with the advisory council and accreditation reports all are referred to the Board of Public Education for action.

"(8) any other policy not inconsistent with public law and which is necessary for the proper operation of a system of vocational education."

Actions relating to such topics as program application, reimbursement procedures, planning, tuition, center designation and program designation have received Board consideration. Depending on how one interprets the term "policy," however, I conclude that no other policies relevant to your questions have been adopted by the Board other than those inferred in the subsections noted above.

I trust the information I have provided may give you some notion of Board "policy" or the lack of it with respect to vocational education. Should questions arise or further references be required as a result of this memorandum, I hope you will not hesitate to let me know. As executive officer of vocational education, and I know other Board of Public Education members would join me, I stand ready to facilitate any research or documentation of policy-level or administrative influences on post-secondary education in Montana.

DC:dj

, Division of Governance Responsibilities, Montana Community Colleges

The Board of Regents of Higher Education, recognizing the dual governance of community colleges by the Board of Regents of Higher Education and the boards of trustees of the community college districts, hereby adopts the following guidelines with respect to governance authority.

The division of responsibilities for the governance of the community colleges in Montana stems from Article X, Section 9, paragraph (2)(a) of the Montana constitution.

> "The government and control of the Montana university system is vested in a board of regents of higher education which shall have full power, responsibility, and authority to supervise, coordinate, manage and control the Montana university system and shall supervise and coordinate other public educational institutions assigned by law."

Section 75-8103 R.C.M. 1947 places the supervision of the community college districts under the board of regents of higher education who shall

1) Appoint a co-ordinator of community college districts and request legislative appropriation for the operation of his office;

2) Formulate and put into effect uniform policies as to budgeting, record-keeping and student accounting;

3) Establish minimum entrance requirements and approve curricular offerings for all community colleges;

4) Direct each community college district to seek accreditation from a recognized accrediting association.

Since the terminology "management and control" of those institutions assigned by law is explicitly omitted from the constitutional language, this function is vested in the local boards of trustees of the community college districts except where otherwise specified by Montana statutes.

The following categories will serve as a basis for dividing the governance responsibilities of the Board of Regents of Higher Education and the local boards of trustees of the community college districts:

I. Degree authorization and curriculum
II. Budgetary and fiscal matters
III. Presidents, faculty and personnel
IV. Student affairs
V. Property and construction
VI. General

The Board of Regents of Higher Education will adopt policy with respect to those areas of governance of the community college districts dictated by the constitution and laws of Montana. Such policy can be found in the Board policy handbook which is available in the office of the Commissioner of Higher Education.

GUIDELINES

I. Degree Authorization and Curriculum

A. The Board of Regents shall authorize degrees and certificate offerings at the community colleges upon recommendation of the boards of trustees of the community college districts and in accord with Board of Regents' policy. The boards of trustees will grant degrees and certificates to the graduates of community colleges upon the recommendation of the faculty.

B. The Board of Regents shall approve -

1. the general academic curricular offerings in accordance with the Board of Regents' policy under Item 2-001-R0973,
2. the regular occupational programs which appear in the community college catalogs in accordance with Board of Regents' policy,
3. the adult and continuing education curricula in accordance with Montana statute and Board of Regents' policy.

The boards of trustees of the community college districts will approve -

1. specific academic courses and sequences within the guidelines specified in Board of Regents' policy and Montana statutes,
2. ad hoc occupational programs and
3. adult and continuing education curricula in accordance with Montana statute and Board of Regents' policy.

The Board of Regents shall direct each community college district to seek accreditation from a recognized accrediting association and other specified accrediting organizations as approved by the Board of Regents. The boards of trustees shall supervise the achievement and maintenance of the accreditation standards and implementation of recommendations from the accrediting organization.

Curricula, Montana Community Colleges

The Board of Regents of Higher Education hereby establishes the following curriculum definitions for Montana Community Colleges:

The academic curricula of the community colleges shall consist of all courses normally offered in the lower division curricula of baccalaureate granting institutions. A student who transfers to a 4-year institution and believes that he has completed in a community college, work which is the equivalent of upper division work at the 4-year institution shall be given the opportunity to demonstrate this fact through a challenge examination or other means. The coordinator of community colleges shall be notified of all proposed new offerings.

The regular occupational programs are those vocational-technical programs which appear in the community college catalogs.

Adult and continuing education programs are those courses or sequential courses funded by the one mill levy authorized under Section 75-8129 R.C.M. 1947 and/or by student fees for the specific courses, short courses or workshops.

The curriculum proposals which require specific Board of Regents' approval shall be submitted in accordance with board policy Item 2-001-R0973. In addition to the guidelines for curriculum proposals under this policy, occupational curriculum proposals will include information on the related job opportunities, as well as data on similar programs offered within the state in any postsecondary institution. The Board of Regents shall consider all other occupational curricula offered by any postsecondary institution in the state in determining necessary or unnecessary duplication.

The Board of Regents authorizes the local boards of trustees to approve adult and continuing education course offerings.

Accreditation of Montana community colleges shall be determined by the Northwest Association of Secondary and Higher Schools and other specific accrediting associations as may be approved by the Board of Regents.

Degree and Certificate Offerings, Montana Community Colleges

The Board of Regents of Higher Education authorizes community colleges to offer the associate in arts degree, associate in applied science degree and certificates of completion in those academic, occupational and vocational areas approved by the board.

In accordance with Section 78-8126 R.C.M. 1947, a community college district shall be prohibited from granting baccalaureate degrees.

COLLEGE OF GREAT FALLS
PHONE 406 / 761 8210 1301 TWENTIETH ST. SOUTH
GREAT FALLS, MONTANA 59405

Office of the
Academic Vice President
and Academic Dean

The College of Great Falls also concurs with the section "Recommendations for Improvement of the Planning Process." I suggest that additional information be included in this section concerning the involvement of the College of Great Falls in cooperative programs with other institutions, such as:

1. The College of Great Falls-Montana State University Cooperative Graduate Program in Education.

2. The College of Great Falls has established resident centers in Conrad, Hayes, and Lewistown. In cooperation with the respective high school districts, the classrooms, library space and other necessary facilities are available to CGF.

3. On the CGF campus an educational program for Teacher Aides in school district #1 is in progress in cooperation with the Montana United Scholarship Services.

4. In cooperation with the Montana Air National Guard, the College of Great Falls offers courses suggested by the MANG to meet the educational needs of the Guard personnel.

5. Many students enrolled in the Vo-Tech program at the Great Falls Vo-Tech Center use the CGF campus dormitories and are involved in CGF campus intramural programs. These same students share in the CGF student activities; athletic and social activities.

6. The College of Great Falls has made available land adjacent to the CGF campus for the construction of the proposed new Vo-Tech Center. It is possible that with the construction of the Vo-Tech Center on this site, many cooperative programs and facilities will be shared.

COLLEGE OF GREAT FALLS
PHONE 406 / 761-8210 1301 TWENTIETH ST. SOUTH
GREAT FALLS, MONTANA 59405

Office of the
Academic Vice President
and Academic Dean

Relative to the section "Principles and Criteria for Long-Range Planning" the following statement is suggested for inclusion:

During the spring and summer months of 1971, the College of Great Falls undertook a Long Range Planning Study (1971-1976). A report of the "Needs and Priorities Committee"was submitted to the CGF Board of Trustees. Some passages from the Long-Range Planning Committee report follow: "The College of Great Falls, emerging from a modest foundation in 1932, has developed as a responsible and responsive center of education that will observe its fortieth anniversary in 1972, with the knowledge that its promise still lies ahead." "The report constitutes the beginning effort in coordinated planning at the College of Great Falls. It is intended to provide the vision for what the College can be if it is guided and urged forward by a sense of unity within the family, by a commitment to the ideals of academic excellence, and by a conviction to keep our offerings relevant to the demands of today." "The master plan imposes a responsibility for efficient management of available resources so that they may be utilized to the maximum advantage of the educational program and to the maximum benefit to the community that surrounds the College."

To realize some of these needs, the College had to undertake a fund drive which was judged to be a success. However, in order to realize all of our continued and future needs and in order to continue to serve directly alone and in cooperation with other institutions this large north central region of Montana, sources of revenue other than those that have been available to CGF will be needed. Thus we concur with the statement: "The wisdom of including Montana's three private colleges..... and the human, physical and dollar resources they represent..... in any comprehensive statewide plan for Montana would seem to be obvious."

A copy of the "College of Great Falls Long Range Planning Study (1971-1976) - Needs and Priorities Committee Planning Report - Spring-Summer 1971" is available for review if necessary.

December 1973

CARROLL COLLEGE

PRINCIPLES AND CRITERIA FOR LONG-RANGE PLANNING

It is obvious that, unless there is a massive infusion of federal money into private higher education in the near future, Carroll will have to be somewhat selectivein determining where the emphasis is to be placed during the next five years in our planning and in our efforts to achieve excellence. A set of priorities, therefore, seems to be essential. Such a program of priorities must, of course, recognize the need for planned improvement in areas of weakness to bring these at least to the level of adequacy. Other areas may be singled out for greater development.

Clearly, the effects of such a priority system will vary with the present condition of a given department or program. For example, a high priority for a particular department might mean maintaining the program at the present level of strength with no increase in faculty. In other cases, it might call for some increase in faculty.

The philosophy and purposes of Carroll College might be turned into a set of criteria for determining the desirability of a given operation. But desirability alone cannot dictate a decision; feasibility must also be taken into account. The following questions have thus been developed:

1. Desirability

    a) The intrinsic value and importance of the program.

        (1) Is it essential to a college?

        (2) Is it essential for a Catholic (religiously oriented) college (e.g., Theology)?

        (3) To what degree is it related to the humanistic orientation of Carroll, i.e., to the total development of human persons (e.g., liberal arts, philosophy, fine arts)?

    b) Is the program uniquely appropriate to a private, urban, Catholic College?

        For example, the Integrated Humanities.

c) Is the program particularly important for the leadership role of a Catholic/private College?

For example, what contributions does it make to the Catholic Educational system generally? Is it pace setting for other Catholic institutions? Does it provide a significant supplementation to State institutions?

d) How important is the program for the public service function of the College?

(1) Does it make possible a service unique or specially appropriate for a Catholic, humanistic College?

(2) Does it make possible service to a unique segment of the population (e.g., Indian students, Catholic students, and students from the Helena Community?

(3) Does it serve the needs of many students in a way that other institutions do not locally, regionally (e.g. the Cooperative Program, the Dential Hygiene and Medical Records Programs)

(4) Are the services merely duplicating existing services without improving on them?

(5) Does it help to fulfill Carroll's special responsibilities as the only college serving the Helena area?

e) How important is the program for service to other parts of the College?

(1) Does it provide services essential to other parts of the College (e.g., mathematics which is needed for general education as well as for many specializations)?

(2) Does it make a notable contribution to students or faculty in other segments of the College (e.g., the Department of English teaches all undergraduates)?

2. Feasibility

a) Non-financial Resources

(1) Does the program now exist in a developed and quality manner?

(2) Has the College supporting services and disciplines which must be maintained with or without the program?

(3) Can adequate space be provided for the program?

(4) Are the library holdings adequate or can they be made adequate?

(5) Is Carroll in a unique position to achieve in the program?

(6) Is the existing staff such as to insure continuing growth?

(7) Are there local resources of great value for the program (e.g., social agencies for practice in the Social Work program, legislature for internships in Political Science)

(8) Is there significant mutual reinforcement between the program and other programs?

b) Financial Resources

(1) Is the program self-supporting?

(2) If not, can it be made self-supporting?

(3) If not, can its extra cost be provided?

(4) What would be the net fiscal effect, on other parts of the College, of the initiation, expansion, or discontinuance of the program?

(5) What is its potential for obtaining outside support?

(6) Does the Program (through prestige, service, et cetera) attract outside donors and so bring additional financial support to the College in general?

(7) What is its prospective competitive position locally? regionally?

(All the questions asked in "2. Feasibility" could be asked for different levels of development. For example, if a certain program were judged highly desirable by the points under "1. Desirability," and it could not be financed as a "peak of excellence," it might still be desirable to develop it only to a level of adequacy. The feasibility study would then relate to this level of development and might yield a favorable decision.)